# COMPLETION REPORT FOR PROBE HOLE C3830 (TX-105) TX TANK FARM 200 WEST AREA

K. D. Reynolds

Duratek Federal Services, Inc., Northwest Operations

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# RPP-13741, Rev. 0

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## **TERMS**

BGS below ground surface

cm centimeter

cps counts per second

DOE U.S. Department of Energy

ft foot

ft•lb foot-pound

in. inch

MDL minimum detection limit pCi/g picocuries per gram

vf% volume fraction percent moisture

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#### 1.0 INTRODUCTION

The U.S. Department of Energy (DOE) assigned the River Protection Project Single-Shell Tank Program the tasks of transferring waste from the single-shell tanks to double-shell tanks and developing and implementing a strategy to retrieve single-shell tank and miscellaneous underground storage tank waste. In support of the eventual retrieval of this waste, the Single-Shell Tank Program Vadose Zone Project was given responsibility for collecting and providing subsurface data from the single-shell tank farm facilities. This data is intended to provide an understanding of the distribution and movement of contaminants in the vadose zone under and adjacent to the tank farms. Subsequently, a work plan was prepared to collect field characterization data in and near Waste Management Area TX. This planned activity is intended to support decision-making relative to DOE/RL-99-36, *Phase 1 RCRA Facility Investigation/Corrective Measures Study Work Plan for Single-Shell Tank Waste Management Areas*. The document, RPP-7578, *Site-Specific SST Phase 1 RFI/CMS Work Plan Addendum for WMAs T and TX-TY*, was necessary to identify and plan characterization efforts as part of DOE/RL-99-36.

The data requirement goals identified through a data quality objective process are documented in RPP-7578. The outlined goals include the tasks, project responsibilities, and schedules for the characterization efforts. One of the identified field characterization efforts is the collection of vadose zone data from the installation of up to four closed-end probe holes in the TX tank farm.

Utilizing RPP-7578 as guidance, DFSNW-DOW-006, *Description of Work: Drilling and Sampling* was prepared defining the methodology and actions for drilling and sampling a series of probe holes in the TX tank farm. This report provides information for the planned series of probe driving activities. DFSNW-DOW-006 included selected sampling depths, borehole construction and sampling methodologies, geophysical logging requirements, decommissioning directions, environmental health and safety program directions and quality control drivers. This borehole completion report is a summary of activities and sampling efforts of probe hole C3830 adjacent to tank TX-105 and near tank TX-101. This is the final probe hole of the series planned under DFSNW-DOW-006. See Figure 1 for a location map of the 241-TX tank farm and Figure 2 for a detailed location map of C3830 and other wells, probe locations, and tanks in the project area. Appendices to this completion report contain copies of the following documentation generated during performance of the outlined work:

- Field Activity Reports (Appendix A)
- Geologic/Sample Logs (Appendix B)

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- Geophysical Logs (Appendix C)
  - High-Purity Germanium (HPGe) and moisture logs from probe hole C3830
- Chain of Custody/Sample Analysis Requests (Appendix D [includes summary sheets])
- Blow Count Forms (Appendix E)
  - Casing driving
- Field Logbook Entries (Appendix F)
- Equipment Cleaning Form (Appendix G)
- Washington State Department of Ecology (Ecology) documentation (Appendix H)
  - Start and decommissioning cards
  - Completion report
- Vadose Zone Tensiometer Placement (Appendix I)
  - Instrument detail diagram
  - Percolation test graphs
  - As-Built Diagram
  - Memo detailing instrument placement
- Noise Monitoring (Appendix J)

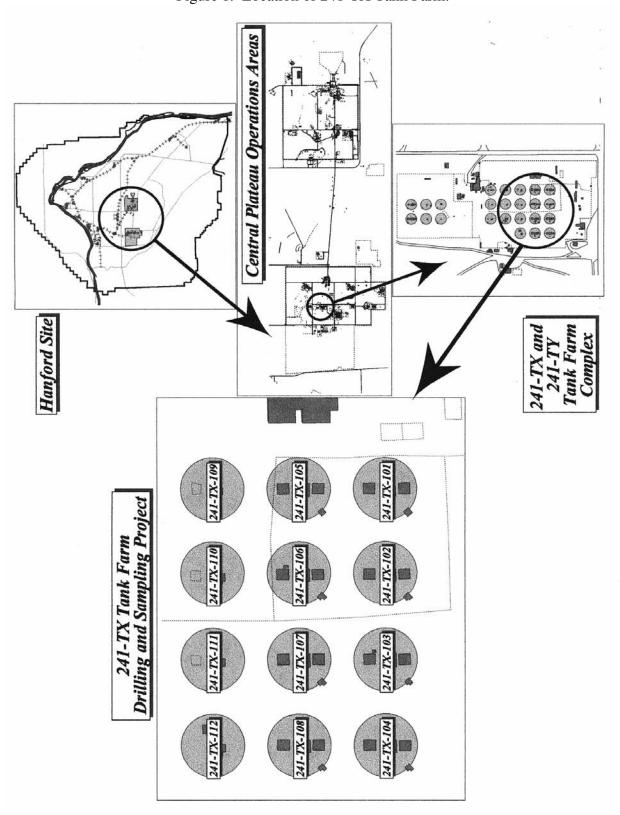


Figure 1. Location of 241-TX Tank Farm.

\$1-02-12 \$1-02-02 241-TX-110 241-TX-112

Figure 2. C3830 and Other Wells, Probe Locations, and Tanks.

#### 2.0 SUMMARY OF ACTIVITIES

Duratek Federal Services, Inc., Northwest Operations (DFSNW) began preliminary design and procurement planning for samplers, casing jacks and wrenches in support of the TX scope of work in late January 2002. This was followed by procurement of the necessary field equipment and support (drill pipe, casing, casing tips and shoes, samplers, casing and drill pipe wrenches, casing jacks and contracting for drilling support) in February and March. Fifteen dry wells in the vicinity of the planned probes were selected for moisture logging and were logged and analyzed by late February 2002. Concurrent with equipment procurement and moisture logging and analysis, DFSNW-DOW-006 was prepared and submitted. The purpose of DFSNW-DOW-006 was to guide field activities, call out selected sample depths and provide documentation of planned activities to tank farm operations. The first probe hole of the series (C3832) adjacent to single shell tank TX-104 was completed during May and June of 2002, the second (C3831) was completed during July and the first two weeks of August.

Field activities relating to C3830 (the third and last of the three planned probes) commenced with mobilization of the probe driving platform and support equipment from C3831 (TX-107) to the C3830 (TX-105) probe site on August 15, 2002. Field Activity Reports were generated by DFSNW field oversight personnel for each day of the deployment and copies are included in Appendix A. Excluding weekends and holidays there were 25 field days associated with mobilization, drilling, sampling, logging, decommissioning, and de-mobilization related to probe hole C3830. The total days on location included one and one-half days of rig-up activities, four days for borehole decommissioning and vadose tensiometer placement, five days of geophysical logging, and 11 days of driving casing and sampling. At the conclusion of the decommissioning and tensiometer placements three and one-half days were required to demobilize the drilling platform and support equipment from the TX Tank Farm. During field operations for this probe hole no full days were lost as down time from rig failures, weather delays or other operational problems. A total of 18 hours was lost for the listed causes during C3830 activities over the 25 days of field operations. The total depth of 116.75 ft below ground surface (BGS), as measured by steel line tape, was reached on September 5, 2002. At this depth the probe tip was approximately 2.95 ft into the highly cemented portion of the calcium carbonates of the Cold Creek sediments. Blow counts exceeded manufacture's recommended numbers per advance depth at this point. Prior to decommissioning, geophysical logging was completed to total depth with moisture and HPGe spectral gamma detectors. During the decommissioning process two small scale percolation tests were conducted and four (4) sets of in situ tensiometers were placed at depths of 96.25 ft, 49.95 ft, 7.45 ft and 2.9 ft BGS. See Appendix H for the Washington-Staterequired Water Well Report documenting the borehole construction details and Appendix I for graphed details of the percolation tests, tensiometer instruments and an As-Built diagram of the instrument placements.

Eighteen (18) split-spoon samples, 1.25 ft long x 2.5 in. in diameter, were collected at specified depths for potential chemical and radiological analysis during the drilling/driving of this probe. (See Appendix D for information regarding sample depth, Chain of Custody, etc. and Appendix B for geologic descriptions of the samples retrieved).

The position of this boring was initially located by CH2M HILL Hanford Group, Inc. DFSNW personnel subsequently documented the location at Easting 566795.41 m, Northing 136166.88 m at an elevation above sea level of 206.005 m (675.869 ft) by use of Global Positioning Satellite instrumentation.

#### 3.0 DRILLING AND SAMPLING DETAILS

#### 3.1 DRILLING

Per the referenced description of work (DFSNW-DOW-006), the casing utilized was a design configuration proven at the SX-108 Slant Borehole Project; e.g., P-110 carbon steel, 18 cm (7-in.) OD x 13 cm (5-13/16-in.) ID with a pin pile thread. Details of the design configuration and methodology are discussed in RPP-6917, SX-108 Slant Borehole Completion Report. The majority of the casing string was composed of 5-ft joints with several 2-, 3- and 4-ft joints for positioning the probe end at proposed sampling intervals. Based on engineering calculations, prior testing and previous success at SX-108, the thread pattern was selected to withstand the expected driving force as well as the maximum pull back capacity of the casing jacks. The drilling rig was equipped with an ICE-40 pile driver, which delivers approximately 40,000 ft•lb of force in the vertical position. The rig, pile driver and remote handling arm configuration were successfully utilized previously for the SX-108 Slant Borehole project. The pile driver provided adequate force to drive the casing to a total depth of 116.75 ft BGS. At approximately 113.8 ft BGS the first occurrence of the highly cemented facies of the Cold Creek sediments were encountered and only another 2.95 ft of further casing advance was possible. At this point the blow counts exceeded the manufacture's recommendations and the casing was determined to be at refusal. Because of lessons learned from C3832 (TX-104) and the success of the C3831 (TX-107) effort, the designed base plate with attachment points for the jacks was again utilized to control the jack position and aid in casing alignment.

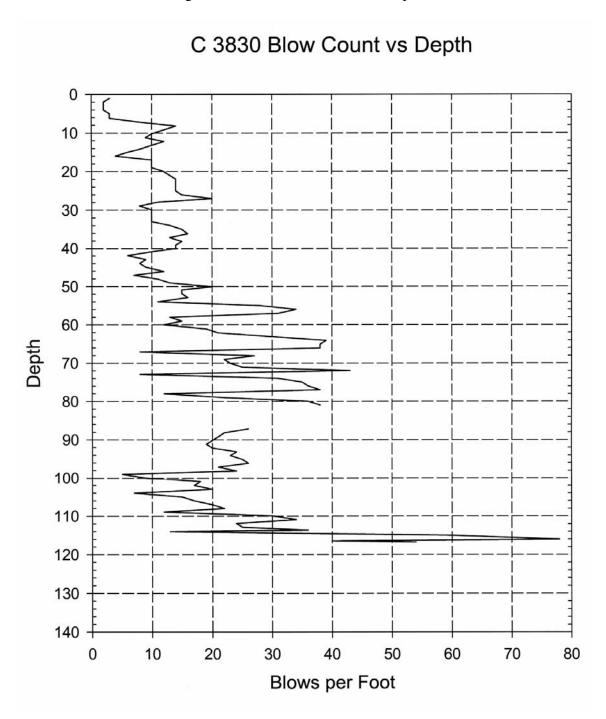
No problems with handling or making up the casing were encountered. Minor problems with operation and maintenance of the wrench breakout and jack system continued during the activities for this probe hole. Approximately six hours of operational time were expended adjusting, cleaning and realigning the jacks, wrenches and driving apparatus during the 11 days of driving activities. Modifications and improvement of the system are still ongoing. Improvements in the system and increasing crew efficiencies have resulted in shorter job duration when compared to the previous probe holes in TX. The initial driving activities at C3832 required 18 days, C3831 required 15 days and C3830 required 11 days to collect roughly the same number of samples and reach depths equivalent to the first two probe holes. The changes in pipe handling methodologies and improved crew work efficiencies have contributed to an approximate 35% reduction in the time required to complete the field activities.

#### 3.1.1 Casing Driving

To accomplish the objectives of acquiring samples the casing was driven in a closed configuration (e.g., removable tip in place) to the planned sample depths, and the tip and inner rod were then removed. A sampler was placed on the rods, inserted through the casing to total depth and the pile driver was utilized to drive the sampler ahead. The manufacturer of the pile driver has recommended an operational limit for determining refusal. That limit is reached when less than one inch of casing advance is gained for 10 full stroke blows of the pile driver.

Blow counts vs. advancement of the casing were recorded and, as expected, varied over depth. Field records (blow counts recorded during driving of the casing to total depth) are provided in Appendix E. Tracking and comparison of blow counts when utilizing this type of pile driver for engineering purposes is complicated by the fact that the hammer reacts to the resistance of the probe to advance. When little resistance is encountered, the hammer does not stroke to its full length and less than the maximum 40,000 ft•lb is applied to advance the casing. When resistance to the advance of the probe increases, full hammer strokes occur and the full potential force of the hammer is used to advance the casing. Figure 3 is a graphic representation of the blow count vs. depth for C3830. At a depth of 112 ft BGS the blow count increased from an average of 20 to 35 blows per foot to 70+ blows per foot. This increased resistance to driving was interpreted as increased resistance to casing advance caused by the caliche-rich silt facies of the Cold Creek. The contact of the Cold Creek with overlying Hanford sand and silts is observed to have occurred at 99.5 ft BGS (as described in sample 14 taken from 98.97 ft to 100.36 ft BGS). Casing refusal (blow counts in excess of 10 blows per inch) occurred between 113.8 ft. and 116.75 ft. BGS. Between these depths, blow counts exceeded 70 blows per 6 inches (i.e., less than one inch per 10 blows-refusal). The contact between the carbonate rich sands and silts and the highly cemented zones was observed to have occurred at 113.8 ft BGS in a sample collected from 113.55 ft to 115.0 ft BGS. Casing was driven to a total depth of 116.75 ft (1.75 ft past the last sample interval).

Figure 3. C3830 Blow Counts—Depth vs. Blow.



#### 3.1.2 Split-Spoon Sampler

A split-spoon sampler with an additional inner steel liner for increased structural strength was specially designed for collecting sediment samples ahead of the driven casing. This sampler collects a 2.5-in. x 1-ft driven sample in two 6-in. long stainless steel liners. Additional material is retrieved in the .25-ft (3-in.) long drive shoe (nose cone) of the sampler body. The sampler body is designed to house the split liner and the sample liners. For this scope of work a sampler utilized in the SX-108 Project was redesigned to accommodate larger liners (2.5-in. vs. 2-in.) through removal of the lead shielding utilized for the previous deployment. Removing the shielding and increasing sample size were undertaken because of the lower expected contamination levels when compared to the previous deployment. This lower expected level of radioactive contamination allowed larger volumes of soil with less shielding to be safely handled at the surface in the field and at the laboratory. The sampler is deployed and advanced by use of an inner string of 4½-in. drill pipe.

Sample handling and any potential contaminate spread, as well as potential exposure of onsite personnel were minimized by capping the bottom of the split-spoon sampler, placing it in a transport container and using the remote-handling arm. The complete split-spoon assembly was placed in a transport drum and transported to Pacific Northwest National Laboratory with the sample intact in the split spoon. The laboratory performed the breakout of the samples from the split spoon and extruded the soil from the liners. No onsite breakdown of the samples was performed.

#### 3.2 SAMPLING

#### 3.2.1 Soil Sampling

During advancement of the borehole, sampling was attempted 18 times using a split-spoon sampler. The split spoon was driven utilizing the diesel pile drive hammer a minimum of 1.25 ft into the bottom of the borehole at each selected sample location. Overdriving of the sampler on the C3832 (TX-104) probe hole had resulted in problems in the laboratory when attempting to remove the samples from the stainless steel inner liners. No sample over compaction problems were reported by the laboratory for removal of the samples retrieved from C 3830.

Projected target depths for sample collection were first outlined in the referenced RFI/CMS documentation (RPP-7578) prepared by CH2M HILL. Further refinement of the preferred sample depths was derived by performing moisture logging in 14 dry wells surrounding all of the proposed probe locations in the TX Farm. To accomplish the target refinement, cross section correlations of observable and identifiable geologic features were prepared from the logging data. These features were compared to the sample depths identified in the RFI/CMS (RPP-7578) and with the approval of the CH2M HILL Project Lead, sampling targets based on projected geologic features (e.g., facies contacts, grain size changes, features such as tank excavation compaction zones) were selected and documented in DFSNW-DOW-006. Table 1 below provides information on targeted sample depths, actual sample depths, generalized geophysical log detections and sediment types for the interval.

Table 1. Sample Depths.

DOW Target (C3830)	TX-105 (3830)	Log Detections/sediment
15-16	14.96-16.31	no remarks/backfill sand
28-29	27.91-29.25	moisture (m) inc/backfill sand-gravel slight m inc/backfill gravelly sand
41-42	40.93-42.49	slight in inc/backfill gravelly sailu
46-47	46.05-47.5	no remarks/backfill gravel-sand
47-48	47.5-49.0	m inc/backfill gravel-sand
53-54	52.98-54.36	m-gamma inc/backfill contact -Hanford bdd slt-and
57-58	56.99-58.37	m-inc/fine-med snd
59-60	58.29-59.7	m-peak/snd-slt interbds
66-67	66.06-67.46	incr m-slight gamma inc/ H. med sand
72-73	71.95-73.3	H. med-fine sand
77-78	76.98-78.35	slty fine sand, interbdd med sand
	00.04.00.04	
81-82	80.91-82.21	m increase/fine-med sand
86-87	86.11-87.41	m-peak/ med sand change to 86.6 slt-snd interbds
99-100	98.97-100.36	m peak, gamm inc/H-Cold Creek contact, snd w lam silt-snd
100-101	100.32-101.72	m peak, gamm peak/lam fine-med snd w silt
103-104	102.99-104.44	low m, gamma high/compacted silt lam
108-109	107.89-109.19	decrease m-gamma/silt to fine sand
Unplanned	113.55-115.00	decrease m-gamma/silt with contact caliche 113.8
Refusal		
119-120		
124-125		
134-135		
134-133		
146-147		

Of the 18 samples collected, 34 of the 36 six-inch liners recovered were 100% full. Two liners from samples taken at 102.99 ft BGS and 107.89 ft BGS (one liner in each of the two sample areas) were only 90% full on recovery. At the time of this report no detailed information relating to laboratory-derived soil moisture content, sample radiochemistry or chemical contamination is available. As noted above several samples were taken in zones that had characteristics that correlate to the geophysical responses observed on the log plots in Appendix C. Descriptions of

the sediments retrieved in the 18 samples are found in Appendix B and Plate 1 (a graphic depiction of the geophysics, expected lithologies and retrieved samples with sample descriptions and formation contact depths).

#### 3.3 GEOPHYSICAL LOGGING

Prior to the initiation of probe driving activities, open dry wells in the vicinity of the probe locations were reviewed for accessibility. Fifteen wells were selected for potential logging. See Figure 2 for the location of the wells selected (marked with tank farm well numbers, for example 51-04-05). Fourteen of the wells were subsequently logged by DFSNW with neutron-moisture instrumentation developed specifically for use at Hanford by DFSNW and analyzed for percent volume moisture content. Results of this logging scope (log plots, log data reports and analysis reports) were reported in Appendix C of RPP-12017, *Completion Report for Probe Hole C3832 (TX-104) TX Tank Farm 200 West Area*. Correlation cross-sections utilizing these logs were generated to select sample depths for the probe locations. Table 2 below lists the dry wells utilized for cross section correlation.

Table 2. Dry Wells Utilized for Cross-Section Correlation.

1.	51-00-07	8.	51-03-01
2.	51-04-06	9.	51-03-02
3.	51-04-05	10.	51-00-06
4.	51-03-09	11.	51-02-02
5.	51-04-02	12.	51-05-07
6.	51-03-11	13.	51-05-05
7.	51-03-12	14.	51-00-03

When the C3830 probe reached refusal (total depth) the inner drill string and tip were removed and geophysical logging was conducted utilizing DFSNW equipment and personnel prior to decommissioning of the probe hole. Appendix C contains copies of the log plots, log data reports, analysis results, and interpretations generated from the probe hole (See log plots for C3830 in Appendix C). The following logging suites were utilized:

- 1. Gross gamma
- 2. Spectral (HPgE) gamma logging
- 3. Neutron-Moisture.

The total gamma logs for the probe hole show several areas of marked changes in the background count rates. The first high count area (approximately 310–320 counts per second) at 1 ft BGS corresponds to the highest Cs-137 contamination observed in the borehole. Cesium was detected from surface to approximately 11 ft BGS with the peak level of 7.5 pCi/g at 1 ft BGS. No other Cesium detections above the minimum detection levels (MDL) of the instrumentation (0.1 pCi/g) were encountered in the probe hole. An additional change in total gamma count rate occurs where an increase from an average 150 cps to approximately 200 cps is

observable at approximately 52 ft. BGS. This change corresponds to the depth where the probe crossed from tank excavation backfill into undisturbed Hanford sediments and is reflected in an approximate 5 pCi/g increase in natural potassium ratio. The volume percent moisture log also reflects this material (formation) change by demonstrating an increase from an average of 5 to 7 vf % in the back fill to 7 to 9 vf % in the undisturbed Hanford sediments. The total gamma count rate also increases from approximately 200 counts to 250 to 300 counts in the 98 ft to 110 ft BGS zone. This depth corresponds with the transition from Hanford sands and silts into the Cold Creek facies of silts- and carbonate-rich sediments. The total count increase is reflected in a marked thorium concentration change, as it relates to the natural potassium/uranium/thorium ratios of spectral response measured by the HPGe detector. Indications of uranium at levels below the statistically valid detection level (10 pCi/g) were observed in the 50 ft to 68 ft BGS interval, as shown on the log plots contained in Appendix C.

#### 4.0 PROBE HOLE DECOMMISSIONING

Decommissioning of probe hole and construction of the borehole tensiometer placement for C3830 commenced on September 16, 2002, and the installation and decommissioning was completed on September 19, 2002. Decommissioning activities met all applicable sections of WAC 173-160, "Minimum Standards for Construction and Maintenance of Wells," requirements. As the casing was extracted, dry bentonite materials were added to fill the annular space. Approximately 40 cubic feet of material (39.8 ft<sup>3</sup> in 56 sacks) was placed into the probe hole as the casing was extracted. This volume slightly exceeds the minimal calculated volume (35.4 ft<sup>3</sup>) for filling the void space created by casing extraction. The probe hole was filled within approximately one ft of grade and covered with gravel to conform to tank farm requirements.

Two percolation tests were conducted to provide baseline information relating to formation conductivity at 103.54 ft to 105.87 ft BGS and at 57.01 ft to 59.05 ft BGS. Appendix I contains the graphs of the falling head test data and an As-Built diagram of the final construction.

As the borehole was backfilled with bentonite the percolation test zones were isolated from the bentonite filled sections by placement of a sand pad approximately 1 ft in thickness. A measured volume of water was then added to the borehole and the infiltration rate (increase in depth to water as the fluid penetrated the borehole wall) was monitored. To avoid having the testing influence the instrument readings after placement, the test zones were filled with an additional ±4 ft of bentonite, and the instruments were placed in the borehole surrounded by sand. After the instruments were encased in the sand, bentonite was added to fill the borehole to the next instrument placement zone. The details of the construction are depicted on the As-Built diagram in Appendix I.

#### 5.0 ENVIRONMENTAL, SAFETY, AND HEALTH

During the field operations, the job site was surveyed by both DFSNW Operations Safety and CH2M HILL Hanford Group, Inc., Tank Farm Industrial Hygiene and Safety personnel for safety and health compliance. To ensure compliance with hearing protection guidelines, noise levels were monitored during the first set of probe driving operations. The results of this monitoring are provided in Appendix J for reference. There were no lost time, reportable *Occupational Safety and Health Act of 1970* injuries, or first aid cases during performance of the work activities relating to this scope of work.

#### 6.0 REFERENCES

- DFSNW-DOW-006, 2002, *Description of Work: Drilling and Sampling*, Rev. 0, Duratek Federal Services, Inc., Northwest Operations, Richland, Washington.
- DOE/RL-99-36, 1999, *Phase 1 RCRA Facility Investigation/Corrective Measures Study Work Plan for Single-Shell Tank Waste Management Areas*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Occupational Safety and Health Act of 1970, 29 USC 651 et seq.
- RPP-6917, 2000, *SX-108 Slant Borehole Completion Report*, Rev. 0, prepared by Waste Management Technical Services for CH2M HILL Hanford Group, Inc., Single Shell Tank Farms Vadose Zone Program, Richland, Washington.
- RPP-7578, 2001, Site-Specific SST Phase 1 RFI/CMS Work Plan Addendum for WMAs T and TX-TY, Rev. 0, CH2M HILL Hanford Group, Inc., Richland, Washington.
- RPP-12017, 2002, Completion Report for Probe Hole C3832 (TX-104) TX Tank Farm 200 West Area, Rev. 0, prepared by Duratek Federal Services, Inc., Northwest Operations, for CH2M Hill Hanford Group, Inc., Richland, Washington.
- WAC 173-160, "Minimum Standards for Construction and Maintenance of Wells," *Washington Administrative Code*, as amended.

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# APPENDIX A FIELD ACTIVITY REPORTS

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DRILI	LING AND	SAMPL	ING (PE	RCUS	SSION) D	AIL	YV	VORK REC	ORD	Page 1	of 1				
WELL I.L	D.: C3830		WELL NUM	BER: N/A REPORT NUMBER: 71				R: 71	DATE: Augus Thursday	t 15, 2002					
CONTRA	CT NUMBER:	8248-55		STAF	RT CARD NO	: S006	531		RIG MODEL	EL/NO: SIMCO 5000 (Rig 106)					
PURPOS. to next sit		meeting. Re	emove shoe, p	repare	repare rig for moving   REFEREN Rev. 0			RENCE: DFSN	W-DOW-006,	LOCATION: 7 West	ΓX Tank Farm, 20				
REFERE	NCE MEASUR	ING POINT:	Steel Plate p	lus 0.2	5 ft (ground le	evel)		TOTAL SHIFT	FOOTAGE: 0.	0 ft.					
CONSTR	RUCTION DE	N: N/A	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				BORING DE	PTH:	START TIME						
CASING	DEPTH	TYPE CASING	DRIVE PO	ION	START END DEPTH DEPTH		PTH	START: 0 ft END: 0 ft		END TIME: 16:30 CONTRACTOR TIME: 0.5 TOTAL TIME: 9.5					
7.0 " OD	NA	CS	Shoe, 7.5 "	OD	0 ft	0 ft.									
DC	CUMENTEL	DOWNTI	ME.		(	CASIN	VG S	UMMARY		PERSONNEL	0				
		20		Botte	om of 7 " OI	D casi	ing (s	tart of shift) =	0 ft.	OPERATOR: K					
	N/	A								D Morris/D Cur					
WEATH	ER CONDITI	ONS (373-2	2716 or	Bottom of 7" OD casing (end of shift) = 0 ft.  Casing (7 in OD) stick up (end of shift) = 0 ft.						WA LICENSE					
373-271		01.0 (010 1	., 10 01	Total casing = 0 ft.						OTHER: S.H. V					
8:30				SAMPLE SUMMARY						R. Sharp (Opr)	voricy				
	nd NW 8-12 r									K. Johnson (PIC	וי				
25% hun	midity, 29.16	barometric	pressure	N/A						K. Harteilius (H					
7	ТІМЕ				DESCR	IPTIC	DN O	F OPERATION	IS/REMARKS	86					
FROM	TO														
07:30	8:00	of shoe, I	ay down ma	st and	have rig pre	epared	d for	moving to next	site.	1572	ivities: Removal				
8:05	9:30	the additi	equipment in on of the revols and take	ised "	'ring""for th	ed with	th no ing s	lips. Required	tap to clean th	d shoe, moved reads came ou	casings, started t of farm to				
9:45	11:30				VI. 1	ayed	Mast	down. Secured	Rig.						
11:30	12:00	Lunch													
12:00	1:00		p. Work for												
1:00	1:30					ved!	Revi	ewed JHA, Ro	ute map and r	g placement					
1:30	1:45		or Truck/Tea			_									
1:45	2:30							g has been mov out of farm.	ved off site an	d staged away	from tanks to be				
REPORT	│ <i>T BY</i> : S. H <sub>A</sub> W	orlev				1	REVI	EWED RY MC	Gardner						
						1				DATE 44	REVIEWED BY: MG Gardner				
TITLE:	Field Teditor	ead $\triangle$				TITLE: Project Manager DATE: 10 - 8-02									

DRILI	LING AND	SAMPL	ING (PE)	RCUS	SSION) I	AILY V	VORK REC	CORD	Page 1 of 1		
WELL I.L	D.: C3830		WELL NUM	BER: N/A REPORT NUMBER: 72					DATE: August 19, 2002 Mono		
CONTRA	CT NUMBER:	8248-55		START CARD NO: S00631 RIG MODEL					/NO: SIMCO 5000 (Rig 106)		
PURPOS equipmen	E: Daily safety	y meeting. S	et-up drill uni	t and support REFERENCE: DFSNW-DOW-(Rev. 0					LOCATION: TX Tank Farm, 20 West		
REFERE	NCE MEASUR	ING POINT:	Steel Plate p	lus 0.2	5 ft (ground l	evel)	TOTAL SHIFT	FOOTAGE: 0.	0 ft.		
- 44 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5	RUCTION DE		245				BORING DE	PTH:	START TIME: 07:00		
CASING	G SET- AT DEPTH	TYPE CASING	TYPE DRIVE POINT START END CASING DIMENSION DEPTH DEPTH					END TIME: 16:30 CONTRACTOR TIME: 0.5 TOTAL TIME: 9.5			
7.0 " OD	NA NA	CS	Shoe, 7.5 "	OD	0 ft	0 ft.	END: 0 ft				
				_		0.10010.0					
DC	OCUMENTEL	DOWNTI	ME	- n		CASING S	PERSONNEL:				
	21/				om of 7 " O		OPERATOR: K. Olson				
******	N/				om of 7" O		D Morris/D Curry				
	ER CONDITI	ONS (373-2	716 or		ng (7 in OD	) stick up	WA LICENSE #: 1217 OTHER: S.H. Worley R. Sharp (Opr)				
373-271	0) F, wind N 3 n	onh WDGT	70E 220/	1 ota	l casing	CAMPIEC					
	, 29.06 baron			-		SAMPLE S					
namany	, 23.00 baron	neure presse				37/4		K. Johnson (PIC)			
						N/A		K. Hartilius (HPT)			
7	TIME				120727222				6		
FROM	ТО	1			DESCRIPTION OF OPERATIONS/REMARKS						
INOM	10	Arrive on site, Blue water Crew, Ricky and Klint only folks on site. Waiting f Steel plate. Conduct daily safety meeting. During the daily safety meeting cre activities. Tire low on Rig, tried calling shop (busy) Kenny arrives he has conhose to reach tire from outside fence. (7:45) Unlocked gate to get the plate move							or truck drivers to move rig and		
07:20	10	Steel plate activities. hose to re	e. Conduct d Tire low o ach tire fron	laily sa n Rig, n outsid	fety meetin tried calling de fence.(7:	g. During g shop (bus 45) Unlock	the daily safety sy) Kenny arriv ked gate to get	y meeting crev yes he has com the plate move	v discussed anticipated apressor and will retrieve more ed,		
07:20 7:50		Steel plate activities. hose to re Truck driv	e. Conduct d Tire low o ach tire fron vers arrive, s	aily sa n Rig, n outsident to	fety meetin tried calling de fence.(7: ACE in. Op	g. During g shop (bus 45) Unlock	the daily safety sy) Kenny arriv ked gate to get	y meeting crev yes he has com the plate move	v discussed anticipated apressor and will retrieve more		
07:20 7:50 9:30		Steel plate activities. hose to re Truck driv Rig in tran	e. Conduct d Tire low o ach tire from vers arrive, s asport to ne	n Rig, n outsion sent to to thole.	fety meetin tried calling de fence.(7: ACE in. Op	g. During g shop (bus 45) Unlock ened Farm	the daily safety sy) Kenny arriv ked gate to get n Gate Crew in	y meeting crev yes he has com the plate move	v discussed anticipated apressor and will retrieve more ed,		
07:20 7:50 9:30 10:30		Steel plate activities. hose to re Truck driv Rig in trai	e. Conduct d Tire low of ach tire from vers arrive, s ansport to near uck out of the	n Rig, n outsion sent to to thole.	fety meetin tried calling de fence.(7: ACE in. Op	g. During g shop (bus 45) Unlock ened Farm	the daily safety sy) Kenny arriv ked gate to get n Gate Crew in	y meeting crev yes he has com the plate move	v discussed anticipated apressor and will retrieve more ed,		
07:20 7:50 9:30 10:30 10:45	12:00	Steel plate activities. hose to re Truck driv Rig in tran Rig set, tr In Farm to	e. Conduct d Tire low o ach tire from vers arrive, s asport to ne	n Rig, n outsion sent to to thole.	fety meetin tried calling de fence.(7: ACE in. Op	g. During g shop (bus 45) Unlock ened Farm	the daily safety sy) Kenny arriv ked gate to get n Gate Crew in	y meeting crev yes he has com the plate move	v discussed anticipated apressor and will retrieve more ed,		
07:20 7:50 9:30 10:30 10:45 12:00	12:00 12:30	Steel plate activities. hose to re Truck driv Rig in trai Rig set, tr In Farm to Lunch	Tire low of ach tire from wers arrive, so asport to new uck out of the original set up rig.	aily sa n Rig, n outsion sent to kt hole. ne farm	fety meetin tried calling de fence.(7: ACE in. Op n, Out of far	g. During g shop (bus 45) Unlock ened Farm m for brea	the daily safet sy) Kenny arriv ked gate to get a Gate Crew in k.	y meeting crev yes he has com the plate move to move steel	v discussed anticipated spressor and will retrieve more ed, plate and oil pad.		
07:20 7:50 9:30 10:30 10:45	12:00	Steel plate activities. hose to re Truck driv Rig in trai Rig set, tr In Farm to Lunch Rig Set-up	e. Conduct de Tire low of ach tire from overs arrive, sonsport to new uck out of the set up rig.  p, Casing set	laily sa in Rig, in outsice sent to ket hole. ne farm	fety meetin tried calling de fence.(7: ACE in. Op n, Out of far er the hole,	g. During g shop (bus 45) Unlock ened Farm m for brea ready to d	the daily safet; sy) Kenny arriv ked gate to get a Gate Crew in k.	y meeting crev yes he has com the plate move to move steel	v discussed anticipated apressor and will retrieve more ed, plate and oil pad.		
07:20 7:50 9:30 10:30 10:45 12:00	12:00 12:30	Steel plate activities. hose to re Truck driv Rig in trai Rig set, tr In Farm to Lunch Rig Set-up	e. Conduct de Tire low of ach tire from overs arrive, sonsport to new uck out of the set up rig.  p, Casing set	laily sa in Rig, in outsice sent to ket hole. ne farm	fety meetin tried calling de fence.(7: ACE in. Op n, Out of far er the hole,	g. During g shop (bus 45) Unlock ened Farm m for brea ready to d	the daily safet sy) Kenny arriv ked gate to get a Gate Crew in k.	y meeting crev yes he has com the plate move to move steel	v discussed anticipated apressor and will retrieve more ed, plate and oil pad.  67" casing including shoe)		
07:20 7:50 9:30 10:30 10:45 12:00	12:00 12:30	Steel plate activities. hose to re Truck driv Rig in trai Rig set, tr In Farm to Lunch Rig Set-up	e. Conduct de Tire low of ach tire from overs arrive, sonsport to new uck out of the set up rig.  p, Casing set	laily sa in Rig, in outsice sent to ket hole. ne farm	fety meetin tried calling de fence.(7: ACE in. Op n, Out of far er the hole,	g. During g shop (bus 45) Unlock ened Farm m for brea ready to d	the daily safet; sy) Kenny arriv ked gate to get a Gate Crew in k.	y meeting crev yes he has com the plate move to move steel	v discussed anticipated apressor and will retrieve more ed, plate and oil pad.  67" casing including shoe)		
07:20 7:50 9:30 10:30 10:45 12:00	12:00 12:30	Steel plate activities. hose to re Truck driv Rig in trai Rig set, tr In Farm to Lunch Rig Set-up	e. Conduct de Tire low of ach tire from overs arrive, sonsport to new uck out of the set up rig.  p, Casing set	laily sa in Rig, in outsice sent to ket hole. ne farm	fety meetin tried calling de fence.(7: ACE in. Op n, Out of far er the hole,	g. During g shop (bus 45) Unlock ened Farm m for brea ready to d	the daily safet; sy) Kenny arriv ked gate to get a Gate Crew in k.	y meeting crev yes he has com the plate move to move steel	v discussed anticipated apressor and will retrieve more ed, plate and oil pad.  67" casing including shoe)		
07:20 7:50 9:30 10:30 10:45 12:00 12:30	12:00 12:30	Steel plate activities. hose to re Truck driv Rig in tran Rig set, tr In Farm to Lunch Rig Set-up Will need	e. Conduct de Tire low of ach tire from overs arrive, sonsport to new uck out of the set up rig.  p, Casing set	laily sa in Rig, in outsice sent to ket hole. ne farm	fety meetin tried calling de fence.(7: ACE in. Op n, Out of far er the hole,	g. During g shop (bus 45) Unlock ened Farm m for brea ready to d urface and	the daily safet; sy) Kenny arriv ked gate to get a Gate Crew in k.	y meeting crev yes he has com the plate move to move steel  AM. (10.23' of base measurer	v discussed anticipated apressor and will retrieve more ed, plate and oil pad.  67" casing including shoe)		
07:20 7:50 9:30 10:30 10:45 12:00 12:30	12:00 12:30 16:30	Steel plate activities. hose to re Truck driv Rig in train Rig set, tr In Farm to Lunch Rig Set-uj Will need	e. Conduct de Tire low of ach tire from overs arrive, sonsport to new uck out of the set up rig.  p, Casing set	laily sa in Rig, in outsice sent to ket hole. ne farm	fety meetin tried calling de fence.(7: ACE in. Op n, Out of far er the hole,	g. During g shop (bus 45) Unlock ened Farm m for brea ready to d urface and	the daily safet; sy) Kenny arriv ked gate to get a Gate Crew in k.  rill tomorrow a other relevant	y meeting crev yes he has com the plate move to move steel AM. (10.23' of base measurer	v discussed anticipated apressor and will retrieve more ed, plate and oil pad.  67" casing including shoe)		

DRILI	ING AND	SAMPL	ING (PEI	RCUS	SION) I	AILY	WORK REC	CORD	Page 1 of 3	
WELL I.I	D.: C3830		WELL NUM	BER: 1	N/A		REPORT NUMBE	CR: 73	DATE: August 20, 2002 Tuesda	
CONTRA	CT NUMBER:	8248-55		START CARD NO: S00631 RIG MODE.					/NO: SIMCO 5000 (Rig 106)	
	E: Daily safety mples S02083-					RE:	W-DOW-006,	LOCATION: TX Tank Farm, 2 West		
REFERE	NCE MEASUR	ING POINT:	Steel Plate p	lus 0.25	ft (ground	level)	TOTAL SHIFT	FOOTAGE: 29	0.25 ft.	
CONSTR	RUCTION DE	SCRIPTIO	N: N/A				PTH:	START TIME: 07:00		
CASING	SET- AT DEPTH	CASING DIMENS					START: 0 ft END: 29.25		END TIME: 16:30 CONTRACTOR TIME: 0.5 TOTAL TIME: 9.5	
7.0 " OD	NA NA	CS	Shoe, 7.5 "	OD	0 ft	27.91 f	Towns of the second	I.		
DC	CUMENTEL	DOWNTI	ME		9.4	CASING	SUMMARY		PERSONNEL:	
Bottom of 7 " OD							(start of shift) =	OPERATOR: K. Olson		
	N/	A		Botto	m of 7" O	D casing	g (end of shift) =	27.91 ft	D Morris/D Curry	
	ER CONDITI	ONS (373-2	716 or			) stick u	p (end of shift) =	The second secon	WA LICENSE #: 1217	
373-271				Total	casing			= 26.09 ft	OTHER: D.E. Skoglie	
	F, wind N 3 n r, 29.06 baron						SUMMARY		R. Sharp (Opr)	
numunty	, 29.00 baron	neure press	ше		ment Blan		K. Johnson (PIC)			
							) 14.96 – 16.31 ( ) 27.91 – 29.25 f		K. Hartelius (HPT)	
	PI (F	1		Samp	10. 50200.	J-03 (#2	) 21.91 - 29.23 1	(1.54 11)		
FROM	TME TO				DESCR	IPTION	OF OPERATIO	VS/REMARKS		
11011	10	Daily safe	ty meeting o	conduct	ted. Discus	ssed anti	cipated activities	(07:20). Rero	oute hydraulic lines for rotary	
07:00	08:09	head latch work decl	ning mechan k). Reset dri	ism. A ve head	djust head d and align	and obta /level dr	in measurements ill unit.	for constant (	3.35 ft ground level to top of	
08:09	09:15						(08:20). Drive of ff. Level hydrau		ft bgs. 10.44 – (3.35 + .9).	
09:15	09:40						(total 16.06 ft).			
09:40		head.	<del></del>						hammer/disassemble drive	
10:00	10:08	Add casir	g 4.0 ft (tota	1 19.44	ft) and Dp	4.0 ft	(total 20.06). Se	t up hammer.		
10:08 10:09	10:09 10:57	Drive cas	ing to 14.96	ft bgs.	19.44 – (3	.35 + 1.1	3). Blows 12/10	/8/6. Secure ha	ammer/disassemble drive head.	
10:57	11:20								t-up hammer/drive head. Sample in drum @ 11:20.	
11:20	11:57	Back-pull (total 21.0	and remove	casing	4 ft. Trip	into the	boring with Dp.	Add casing 5.	0 (total 20.44 ft) and Dp 5.0	
11:57	12:50	Lunch (1	1:57 - 12:35	) Set-ı	ıp hammer	(d				
12:50	12:59	Drive cas	ing to 16.02	ft bgs.	20.44 - (3	.35 + 1.0			/disassemble drive head.	
12:59	13:13						t (total 26.07) @			
13:13	13:15								ure hammer/disassemble head.	
12:59 13:35	13:35 13:40						otal 31.07) @ 13		mmer. ure hammer/disassemble head.	
13:40	13:40						otal 33.07) @ 13			
13:52	14:15								mmer. ner/disassemble head. Trip out	
14:15	14:48		10.00						n drum @ 14:48.	
14:48	16:30						ntenance and doc			
Activities and the second		•	2 it casing.	при	Dp. Conc	- S2355c2			occure site.	
	BY: D.E. Sk	Control of the Contro	14.22 49			RE	VIEWED BY: MO	Jaraner	Dime i di	
HILE:	rield Team	ead	E. Sko	-1		TI	LE: Project Ma	nager	DATE: 10-8.02	
OTOT										

Duratek Duratek Federal S	ervices, Inc., Northwest Operations
C3830 SAMPLE FORM	FAR No. <u>73</u> Page <u>2</u> of <u>3</u>
Sample No. 502083 - 02 Sample Tracking No.	1
Target Depth 15 to 16	
(1) 3.35 top of rig floor above ground	
2) 4,48 casing stickup above ground	
Csg Total (3) 19.44 - Stickup (2) $4.48 = TD(4)$	4.96
Does not include drive head	(5) ,25
Backpull stickup (2+5) 、25	Rig Floor
Sample depth (4) 14.96 to (4+6) 16.31	1148
	(2) 4,48 (1) 3,35
Blow Count 1.35	Ground Level
.5 ft 1 ft 1.55 ft	N. H.
Start Time	
1057	_
End Time	
1079	_
Estimated Recovery: 100%	0.44
Remarks:	(3) 19.44
(1) Sample in drum @ 11:20 hvs.	(4) 14,96
(e) Sample Moist on Tip (bottom)	
(c) sample MOIST ON 11 (BOTTOM)	
1 = Top of rig floor above ground	(7)16,31
2 = Stickup of csg above ground 1 + measure from floo	r to
top csg = SU 3 = Total csg length	
4 = Depth of csg = Total Depth (TD)	
Total $csg - SU^{(2)} = TD$	(3).25
5 = Casing back pull	10 (35)
6 = Sampler drive distance 7 = Total depth of driven sample = 4 + 6	1 1 1 1 1
/ Total depth of differ sample - 4 + 0	
PREPARED BY (Please print): D. E. SKOGLIE	REVIEWED BY (Please print): MG GARDNER
TITLE: FTL 0 A 00 DATE: 08 20 02	TITLE: My DATE:
SIGNATURE: Val Ello glie	SIGNATURE: Mlbal 10-8-02
0	

Duratek	D	uratek I	Federal Servic	es, Inc., Northy	west Operations
C3830 S	SAMPLE	E FORM	·	FAR No. <u>73</u>	Page 3 of 3
Sample No. 5020	83-03	Sample Tra	cking No. 2		
	-1	to	29	]	
1) 3.35 top of rig		ground		1	
2) <u>4.53</u> casing sti					
			S = TD(4) 27.91	1	•
Does not include dr					[=](5),25
Backpull stickup (2	+5) ,25			1	Rig Floor
Sample depth (4)		to (4+6)	29.25		1/2
		gc			(2) 4,53 (1) 3.35
	Blow	Count	1.34	Ground	
	.5 ft	1 ft	1.57 1.5°ft	1 1 1 N N	(-)( )( )( )(
Start Time		725	1		and the state of t
1428	2	2	1		
End Time					
Remarks:  (1) SAmple  1 = Top of rig floor 2 = Stickup of csg = SU 3 = Total csg lengtl 4 = Depth of csg = Total csg - SU 5 = Casing back pu 6 = Sampler drive of 7 = Total depth of of	above groun  Total Depth  Total ID  Total II	nd d 1 + measu (TD)		(4) 27,9	(5), 25
PREPARED BY (Plea FITLE: FTL SIGNATURE:	se print): D.  avid E Sh	E. SKOGI ATE: 8/2	LIE 20/02	REVIEWED BY (Pleas TITLE: NGR SIGNATURE: NGC	se print): MG GARDNER DATE:

DRILI	LING AND	SAMPL	ING (PEI	RCUS	SSION) D	AILY V	WORK REC	ORD	Page 1 of 3		
WELL I.L	D.: C3830		WELL NUM	BER: N/A REPORT NUMBER: 74					DATE: August 21, 2002 Wednesday		
CONTRA	CT NUMBER:	8248-55		STAR	T CARD NO	: S00631		RIG MODEL	EL/NO: SIMCO 5000 (Rig 106)		
	E: Daily safety imples S02083-			a depti	n of 46.05 ft.	REFI Rev.	ERENCE: DFSN	W-DOW-006,	LOCATION: TX Tank Farm, 20 West		
REFERE	NCE MEASUR	ING POINT:	Steel Plate p	lus 0.2	ft (ground l	evel)	TOTAL SHIFT	FOOTAGE: 18	8.25 ft.		
	RUCTION DE					-	BORING DE	PTH:	START TIME: 07:00		
CASING	DEPTH	TYPE CASING	DRIVE PO	ION	START DEPTH	END DEPTH	START: 29.2 END: 47.3		END TIME: 16:30 CONTRACTOR TIME: 0.5 TOTAL TIME: 9.5		
7.0 " OD	NA	CS	Shoe, 7.5 "	OD	27.91 ft	46.05 ft					
DC	CUMENTEL	DOWNTI	ME			CASING S	UMMARY		PERSONNEL:		
	2 hr – health	physics		Botto			start of shift) =	27.91 ft.	OPERATOR: K. Olson		
		,					end of shift) =		D Morris/D Curry		
WEATH	ER CONDITI	ONS (373-2	2716 or		ng (7 in OD		WA LICENSE #: 1217				
373-2710			11.05.55	Total	casing	4	OTHER: D.E. Skoglie/S. Worley				
	F, wind W 3 -			SAMPLE SUMMARY					Snook (Opr)		
humidity	, 29.269 baro	metric pres	sure	Sam	ole: S02083	-04 (#3) 4	0.93-42.49 (1.3	35 ft) 100%	K. Johnson (PIC)		
				Sample: S02083-05 (#4) 46.05 -47.5 ft (1.45 ft) 100%					K. Hartelius (HPT)		
	TIME				DESCR.	IPTION C	F OPERATION	S/REMARKS			
FROM 07:00	07:18	Daily as 6			tad Diama			C1-+	quip inspection.		
07:00	07:18						8 ft). Set ham		quip inspection.		
	07.43	Drive casing to 30.95 ft bgs. $35.45 - (3.35 + .1.15)$ . Blows $8/10/10/2$ . Secure h						ammer/disassemble drive head			
	07:43								ammer/disassemble drive head		
07:43	07:43 08:00 08:11	Add casin	ng 5.0 ft (tota	1 40.4	5 ft) and Dp	5.0 ft (to	tal 41.08). Set	up hammer.			
08:00	08:00	Add casin Drive cas	ng 5.0 ft (tota ing to 36.1 ft	1 40.4: bgs.	5 ft) and Dp 40.45 – (3.3	5.0 ft (to 35 + 1.0).	tal 41.08). Set Blows 10/10/13	up hammer. /15/16. Secur	ammer/disassemble drive head e hammer/disassemble dr/head.		
07:43 08:00 08:11	08:00 08:11	Add casin Drive cas Add casin	ng 5.0 ft (total ing to 36.1 ft ng 5.0 ft (total	1 40.4: bgs.	5 ft) and Dp 40.45 – (3.3 5 ft) and Dp	5.0 ft (to 35 + 1.0). I 5.01 ft (to	otal 41.08). Set Blows 10/10/13 total 46.09). Se	up hammer. /15/16. Secur t up hammer.			
07:43 08:00 08:11 08:26 08:30	08:00 08:11 08:26 08:30 09:17	Add casin Drive cas Add casin Drive cas Back pull	ng 5.0 ft (total ing to 36.1 ft ing 5.0 ft (total ing to 40.93 casing .25 ft	1 40.4: bgs. 1 45.4: ft bgs.	5 ft) and Dp 40.45 – (3.3 5 ft) and Dp 45.45 – (3.3 34) Trip Dp	5.0  ft (to  35 + 1.0). $5.01  ft ( 35 + 1.17)$ out of bo	otal 41.08). Set Blows 10/10/13 total 46.09). Set b. Blows 13/15/ re –hole. Run s	up hammer. /15/16. Secur t up hammer. 14/14/10. Sec sampler in bor	e hammer/disassemble dr/head.  ure hammer/remove dr/head.  ring, Set-up hammer/drive head		
07:43 08:00 08:11 08:26 08:30 09:17	08:00 08:11 08:26 08:30 09:17 09:40	Add casin Drive cas Add casin Drive cas Back pull Drive san	ng 5.0 ft (total ing to 36.1 ft ng 5.0 ft (total ing to 40.93 casing .25 ft nple S02083-	1 40.4: bgs. 1 45.4: ft bgs. t. (08:3	5 ft) and Dp 40.45 – (3.3 5 ft) and Dp 45.45 – (3.3 34) Trip Dp 5) 40.93 – 43	5.0 ft (to 35 + 1.0). I 5.01 ft (to 35 + 1.17) 5 out of bo 2.49 ft (1.10)	tal 41.08). Set Blows 10/10/13 total 46.09). Set b. Blows 13/15/ re –hole. Run s 56 ft). Blows 1	up hammer. /15/16. Secur t up hammer. 14/14/10. Secur sampler in bor /2/1 (09:18).	e hammer/disassemble dr/head. ure hammer/remove dr/head. ring. Set-up hammer/drive head Sample in drum @ 09:40 hrs.		
07:43 08:00 08:11 08:26 08:30 09:17 09:40	08:00 08:11 08:26 08:30 09:17 09:40 10:37	Add casin Drive cas Add casin Drive cas Back pull Drive san Trip into	ng 5.0 ft (total ing to 36.1 ft ing 5.0 ft (total ing to 40.93 casing .25 ft inple S02083- the boring w	1 40.4: bgs. 1 45.4: ft bgs. t. (08:3 04 (#3	5 ft) and Dp 40.45 – (3.3 5 ft) and Dp 45.45 – (3.3 64) Trip Dp 6) 40.93 – 42 6. Break 10:	5.0 ft (to 35 + 1.0). 1 5.01 ft (to 35 + 1.17) 5 out of bo 2.49 ft (1 00 - 10:22	tal 41.08). Set Blows 10/10/13 total 46.09). Set b. Blows 13/15/ re –hole. Run set 56 ft). Blows 1 2. Add casing 5	up hammer. /15/16. Secur t up hammer. 14/14/10. Secur sampler in bor /2/1 (09:18). 5.0 (total 50.4)	e hammer/disassemble dr/head. ure hammer/remove dr/head. ring. Set-up hammer/drive head Sample in drum @ 09:40 hrs. 5 ft) and Dp 5.0 (total 51.09 ft).		
07:43 08:00 08:11 08:26 08:30 09:17 09:40 10:37	08:00 08:11 08:26 08:30 09:17 09:40 10:37 10:44	Add casin Drive cas Add casin Drive cas Back pull Drive san Trip into Set-up ha	ng 5.0 ft (total ing to 36.1 ft ing 5.0 ft (total ing to 40.93 casing .25 ft inple S02083- the boring we mmer (10:42	1 40.43 bgs. d 45.43 ft bgs. t. (08:3 04 (#3 ith Dp	5 ft) and Dp 40.45 – (3.3 5 ft) and Dp 45.45 – (3.3 34) Trip Dp 5) 40.93 – 4 . Break 10: ve casing to	5.0 ft (to 35 + 1.0). 1 5.01 ft (to 35 + 1.17) 5 out of bo 2.49 ft (1 00 - 10:22	tal 41.08). Set Blows 10/10/13 total 46.09). Set b. Blows 13/15/ re –hole. Run s 56 ft). Blows 1 2. Add casing 5 ggs. 50.45 – (3.	up hammer. /15/16. Secur t up hammer. 14/14/10. Secur tampler in bor /2/1 (09:18). 5.0 (total 50.4: 35 + 1.05). B	e hammer/disassemble dr/head. ure hammer/remove dr/head. ring. Set-up hammer/drive head Sample in drum @ 09:40 hrs. 5 ft) and Dp 5.0 (total 51.09 ft). lows 6/9/8/9/12.		
07:43 08:00 08:11 08:26 08:30 09:17 09:40 10:37 10:44	08:00 08:11 08:26 08:30 09:17 09:40 10:37 10:44 11:08	Add casin Drive cas: Add casin Drive cas: Back pull Drive san Trip into Set-up ha Secure ha	ng 5.0 ft (total ing to 36.1 ft ing 5.0 ft (total ing to 40.93 casing .25 ft inple S02083- the boring we mmer (10:42 mmer/disass	th 40.43 th bgs. th 45.43 fth bgs. th (08:3 04 (#3 th Dp. th). Dri emble	5 ft) and Dp 40.45 – (3.3 5 ft) and Dp 45.45 – (3.3 34) Trip Dp 5) 40.93 – 4 . Break 10: ve casing to	5.0 ft (to 35 + 1.0). 1 5.01 ft (to 35 + 1.17) 5 out of bo 2.49 ft (1 00 - 10:22	tal 41.08). Set Blows 10/10/13 total 46.09). Set b. Blows 13/15/ re –hole. Run set 56 ft). Blows 1 2. Add casing 5	up hammer. /15/16. Secur t up hammer. 14/14/10. Secur tampler in bor /2/1 (09:18). 5.0 (total 50.4: 35 + 1.05). B	e hammer/disassemble dr/head. ure hammer/remove dr/head. ring. Set-up hammer/drive head Sample in drum @ 09:40 hrs. 5 ft) and Dp 5.0 (total 51.09 ft). lows 6/9/8/9/12.		
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07:43 08:00 08:11 08:26 08:30 09:17 09:40 10:37 10:44 11:08 11:30 12:00 1:30 2:15 3:00 REPORT	08:00 08:11 08:26 08:30 09:17 09:40 10:37 10:44 11:08 11:30 12:00 1:30 2:15 3:00 4:30	Add casin Drive cas: Add casin Drive cas: Back pull Drive san Trip into Set-up ha: Secure ha Run samp Lunch Back in th Tagged B Lay mast up and ou Fill out re BSE crew oglie/S. Wo	ng 5.0 ft (total ing to 36.1 ft ag 5.0 ft (total ing to 40.93 casing .25 ft aple S02083-the boring was marer (10:42 mmer/disassoler to bottom 47.45 down and cot to f farm. prorts leave so discusses defined in total incomports and so to to farm.	th 40.43 bys. at 45.43 ft bys. at (08.3 bys. at (08.3 bys. at (09.3 bys.	5 ft) and Dp 40.45 – (3.3 5 ft) and Dp 45.45 – (3.3 14) Trip Dp 15) 40.93 – 4 16. Break 10: 17 ve casing to drive head. 18 solution of the solution o	5.0 ft (to 35 + 1.0). 1 5.01 ft (to 35 + 1.17) 5 out of bo 2.49 ft (1 00 - 10:22 5 46.05ft b Back-pu 05 (#4) 46 oler back i component d equipme REVI	htal 41.08). Set Blows 10/10/13 total 46.09). Set b. Blows 13/15/ re—hole. Run s 56 ft). Blows 1 2. Add casing 5 gs. 50.45 – (3. Il casing .25 ft. 5.05- 47.5' (1.44) in hole. HPT hai inspection. No	up hammer. /15/16. Secur t up hammer. 14/14/10. Secur tampler in bon /2/1 (09:18). 5.0 (total 50.4: 35 + 1.05). B Trip Dp out of the leave, shu deficiencies in G Gardner	e hammer/disassemble dr/head.  ture hammer/remove dr/head.  ting. Set-up hammer/drive head Sample in drum @ 09:40 hrs.  5 ft) and Dp 5.0 (total 51.09 ft).  lows 6/9/8/9/12.  of boring.  2:30) sample in drum (12:45)  at down drilling		

Durate	ķ I	Ouratek I	Federal Service	es, Inc., Northw	est Operations
C3830	SAMPL	E FORM		FAR No. 74	Page 2 of 3
Sample No. 502	083-04	Sample Tra	cking No. 3		
Target Depth	41		12.		
1) 3.35 top of ri	ig floor abov				
1) 452 casings	tickun above	ground			
Csg Total (3) 45.	45 - Sticku	p (2) 4,52	=TD (4)		
oes not include o	drive head	• • • • • • • • • • • • • • • • • • • •	40,43		F=7(5), Z5
Backpull stickup (	(2+5) , 2:	5			Rig Floor
Sample depth (4)		to (4+6)	42.49		
					(2) 4,52 (1) 3,35
	Blow	Count	1.56	Ground L	evel
	.5 ft	1 ft	1.5 ft	T INTO	20 12021
Start Time	.5 10		1.510		
0917	/	2	1		
End Time					
0918					
Estimated Recove	ery: 100 %	6			
					(3) 45,45
Remarks:			0	(4) 40,93	
( SAM P	le in avi	meo	9:40 Ars.	(4) 4011	
1 = Top of rig flo	or above grou	ınd		(1) 42,49	
2 = Stickup of csg			re from floor to		
top csg = SU					
3 = Total csg leng 4 = Depth of csg =		, (TD)			
Total csg – SU		1(1D)			(5) , 25
5 = Casing back p	oull			1 1 .	
6 = Sampler drive				(6)	56
7 = Total depth of	driven samp	10 = 4 + 6		V .	
		6 610	:116		
PREPARED BY (Ple TITLE: FTL		E. SKOO			e print): MG GARDNER
SIGNATURE:	David E.S	PATE: 08	2102	TITLE: MGR	DATE:
SIGNATURE:	www. D	The		SIGNATURE: Modern	10-08-02
DFSNW-WS-00					- Company of the Comp

Duratel	y Durate	k Federal Servic	es, Inc., Northw	vest Operations
C3830	SAMPLE FOR	<b>M</b>	FAR No. 74	Page <u>3</u> of <u>3</u>
	083-05 Sample	Tracking No. 4		
Target Depth	46 to	47		
(1) <u>3.35</u> top of ri	g floor above ground			
	tickup above ground			
Csg Total (3) 50 /	45 - Stickup (2) 4,	4 = TD (4) <sub>46.05</sub>		c->-
Does not include d	ACCOUNT OF THE PARTY OF THE PAR	76,	1	(5), 25
Backpull stickup (2				Rig Floor
Sample depth (4)	46.05 to (4+6)	47.5		(2) 4,4
		66		(1) 3,2
	Blow Count	1.45	Ground L	
	.5 ft 1 ft	1.5 ft		
Start Time	1 1	1		
End Time				
1230				
Estimated Recover	ry: 100%			
Estillated Recover	iy. 70070			(3) 50,45
Remarks:			1105	
(1) 5 Am	ple in drum e	12:50 hrs.	(4) 46,05	
1 = Top of rig floo	or above ground		7) 47.5	
2 = Stickup of csg	above ground 1 + me	asure from floor to		
top csg = SU	41.			
3 = Total csg leng 4 = Depth of csg =	tn = Total Depth (TD)			
Total csg - SU	$T^{(2)} = TD$			(5) , 25
5 = Casing back p			(0)	7// 5
6 = Sampler drive 7 = Total depth of	driven sample = $4 + \epsilon$	5	1 (6)	
	<u> </u>			
		,		7/2
	ase print): D.E. SKO	GLIE		e print): MG GARANER
TITLE: FTL	Paint F. Shochie	082102	TITLE: MER	DATE:
SIGNATURE:	and should		SIGNATURE: Meloa	0-08-02
				The second secon

DRILI	LING AND	SAMPL	ING (PE)	RCUS	SSION) D	AILY	WORK	REC	CORD	Page 1	of 1	
WELL I.I	D.: C3830		WELL NUM	BER: N/A REPORT NUMBER: 75			CR: 75	DATE: August 22, 2002 Thursday				
CONTRA	CT NUMBER:	8248-55		STAR	START CARD NO: S00631				RIG MODEL	IG MODEL/NO: SIMCO 5000 (Rig 106)		
	E: Daily safety in samples S02				depth of 56.99 ft REFERENCE: DFSNW-DOW-006, 083-08. Rev. 0			LOCATION: TX Tank Farm, West				
REFERE	NCE MEASUR	ING POINT	Steel Plate				TOTAL	SHIFT	FOOTAGE: 10	.87 ft.		
emended Uni	RUCTION DE	HAVE TO PERCURSIONS	ers Souther				BORIN			START TIM	E: 07:00	
	CET		V. 1V/A		T		START			END TIME:		
CASIN	AT.	TYPE	DRIVE PO		START	ENI	77			TOTAL TIM	OR TIME: 0.5	
SIZE	DEPTH	CASING	DIMENS		DEPTH	DEPT	LIND.	58	37 ft	TOTAL TIM	E. 9.5	
7.0 " OD	NA	CS	Shoe, 7.5 "	OD	46.05 ft	56.99	rft					
DO	OCUMENTED	DOWNTIA	ME		(	CASINO	G SUMMAR	Y		PERSONNE	L:	
200	COMENTED	DOMINI		Botte	om of 7 " Ol				= 46.05 ft	OPERATOR:		
	N/	A			om of 7" O					D Morris/D Cu		
WF 4 TH	ER CONDITI		716 or		ng (7 in OD					WA LICENSE		
373-271		0110 (373-2	71001	-	- B ( ·	,	-F (			OTHER: D.E.		
	7.2				5	SAMPL	E SUMMAR	RY		R. Sharp/ S. Si		
	Temperature 8			Sample: S02083-06 (#5) 47.5 - 49.0 (1.5 ft) 100%						K. Johnson (P		
Barome	tric pressure 2	6.62, Wind	SW 6						.38 ft) 100%	K. Harteilius (		
mph									.38 ft) 100%	The Control of the Co	5000 <b>6</b> 5	
	ТІМЕ					ID.MI.O.						
FROM	TO				DESCR	IPTIOI	V OF OPER	ATIO	NS/REMARKS			
07:00	07:18	Daily safe	ty meeting	conduc	ted. Discus	ssed an	ticipated act	ivities	(07:23). Con	plete equip n	nain/inspection.	
07:18	07:42				d for mast i							
07:43	08:18										d place cap (1 o-	
08:18	08:50	ring and a	swipe of w	ell-gua	rd). Sample	e in dru	m @ 08:18	nrs. S	Set-up next sar Set up hammer	npier.		
08:18	08:30	Drive casi	ing to 50 87	ft has	55.45 - (3)	$\frac{9.01}{35+1}$	23) Blows	7/11/1	3/20/15 Secur	e hammer/dis	sassemble dr/heac	
08:11	08:26								up hammer.	e nammer dis	assemble diriteat	
08:26	09:20	Drive casi	ing to 52.98	ft bos	57.45 - (3.	35 + 1	12). Blows	15/16.	Secure hamm	er/remove dr/	head.	
09:20	10:52	Tip is stud	ck. Break 0	9:45 -	10:00. Fue	l truck	in RBA fuel	ing su	pport generate	r. Repair hyd	fraulic hose	
									ut of boring @			
10:52	11:09	Run the sa	ampler in ar	d set-u	p the drive	head.						
11:11	12:00								Sample at the s	urface @ 11:	37. No	
		radiologic	al contamin	ation r	noted. Samp	ole in d	rum @ 11:4	2.				
12:00	12:45	Lunch. M	fr. Flower fa	bricate	ed slips for	the 7 in	ch. A weld	ing an	d cutting perm	it was prepar	ed and approved.	
									ne Kutrite will			
		system.	i access at a	iatei u	ate. A tab v	was we	ided on the i	ши	er as a back-up	to the cable	securement	
12:45	13:24		g 4 0 ft (to	al 61 4	15 ft) and Dr	n 40 f	(total 62.1	ft) S	et up hammer.		111111	
13:24	13:37										mer/disassemble	
	15.57		Back pull ca			(						
13:37	14:53	Trip out I	Op (14:03).	Trip ir	with samp				(14:25). Drive 50 and in drum		083-08 (56.99 –	
14:53	16:30	_						-	p Dp from pip			
	<i>T BY</i> : D.E. Sk			- un ou			EVIEWED I			-,		
KEPUK										DATE 4	4 -107 - 43	
-	T11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						TITLE: Project Manager DATE: 10-08-02					
	Field Team I	ead - 1	Sko	1			ITLE: Proje		,,,,	DATE: /	0-08-0-	

Durate	itt	Duratek Federal Servi	ces, inc., Northw	est Operations
C3830	SAMPL	E FORM	FAR No. <u>75</u>	Page 2 of 4
Sample No. 502	083-06	Sample Tracking No. 5		
Target Depth	48	to 49		
(1) <u>3.35</u> top of 1	rig floor abov	re ground		
(2) <u>3.0</u> casing	stickup above	e ground	_	
Csg Total (3) 50	45 - Stick	$ap(2) 3.0 = TD(4)_{47.45}$		
Does not include	drive head	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	_	(5) .25
Backpull stickup		S		Rig Floor
Sample depth (4)	47.45	to (4+6) 49.0		(2) 3.0 (1) 235
		*		(1) 3:
	Blow	Count	Ground Lev	
	.5 ft	1 ft 1.5 ft		
Start Time	1	2 1		
End Time				
End Time				
(2) SAM Ne 1 = Top of rig flo	or above groung the Total Depth pull distance	ede 47.45 (back To le).  C 0818 hrs.  and and 1 + measure from floor to	(4) <u>47.</u> 45	(3) 50.45
PREPARED BY (Ple TITLE: FTL SIGNATURE:A	^ I	LE. SKOglie DATE: 08/2202 Skaglie	REVIEWED BY (Please p TITLE: MR SIGNATURE: Mlban	DATE:

Duratek	Duratek Federal	l Services, Inc., Northy	vest Operations
C3830	SAMPLE FORM	FAR No. <u>75</u>	Page 3 of 4
	83-07 Sample Tracking No	. 6	
Target Depth	53 to 54		
1) 3.35 top of rig	g floor above ground		
(2) <u>4,47</u> casing st	ickup above ground		
Csg Total (3) 57.4 Does not include di	- Stickup (2) 4,47 = TD ( rive head	(4) -2.98	[5],25
Backpull stickup (2			Rig Floor
Sample depth (4)	52.98 to (4+6) 54.36		(2) 4.47 (1) 3.35
	Blow Count /, 3	Ground 1	Level 1
	.5 ft 1 ft 1,8	T T	200
Start Time	3 3 2		
End Time			F
Estimated Recover Remarks:			(3) 57.45
(1) Sample	in drum @ 11:42 hu	(4 <u>) 52</u> , 98	
40			
1 = Top of rig floo	r above ground	(1) 54,36	
2 = Stickup of csg	above ground 1 + measure from fl	loor to	
top csg = SU 3 = Total csg lengt	h		
4 = Depth of csg =	Total Depth (TD)		1030
Total csg - SU	$^{2)} = TD$	1	(5) .28
5 = Casing back pt 6 = Sampler drive		(6)	1,38
7 = Total depth of	driven sample = 4 + 6	1 1	
		Chima	
PREPARED BY (Plea	se print): D.E. SKOGLIE		se print): MB GARDNER
SIGNATURE:	and E Sportio	SIGNATURE: MGG	DATE:
		166	10-08-02

Duratek Duratek Federal Service	ces, Inc., Northw	est Operations
C383O SAMPLE FORM	FAR No. 75	Page <u>4</u> of <u>4</u>
Sample No. 502083 - 08 Sample Tracking No. 7  Target Depth 57 to 58  (1) 3.35 top of rig floor above ground  (2) 4.46 casing stickup above ground  Csg Total (3) 61.45 - Stickup (2) 4.46 = TD (4)  Does not include drive head  Backpull stickup (2+5) . 25  Sample depth (4) 56.99 to (4+6) 58.37	PAR NO. 73	Rig Floor (2) 4,444 (1) 3,3
Blow Count /.38    .5 ft   1 ft   1.5 ft     Start Time   3   4   2     End Time   1426     Estimated Recovery: 100%	Ground Le	rel 100
Remarks:  (a) Sample in dww— (2) 14;53 hrs,  1 = Top of rig floor above ground 2 = Stickup of csg above ground 1 + measure from floor to top csg = SU 3 = Total csg length 4 = Depth of csg = Total Depth (TD) Total csg - SU <sup>(2)</sup> = TD 5 = Casing back pull 6 = Sampler drive distance 7 = Total depth of driven sample = 4 + 6	(4) 56.99 (7) 58,37	(3) 61.45
PREPARED BY (Please print): D.E. SKOGLIE  TITLE: FTL  SIGNATURE: David E. Skoglie  DESNW.WS-00_	REVIEWED BY (Please TITLE: MGA SIGNATURE: MGGAA	print): MG GARANER DATE: Co-8-02

DRIL	LING AND	SAMPL	ING (PEF	RCUS	SSION) D	AILY	WORK REC	CORD	Page 1 of 2
WELL I.	D.: C3830		WELL NUM	BER:	N/A REPORT NUMBER: 76			DATE: August 23, 2002 Friday	
CONTRACT NUMBER: 8248-55 START						: S00631	L/NO: SIMCO 5000 (Rig 106)		
PURPOSE: Daily and weekly safety meeting. Drive 56.99 ft bgs. Obtain samples S02083-09.					re casing depth is REFERENCE: DFS Rev. 0			W-DOW-006	, LOCATION: TX Tank Farm, 2
REFERENCE MEASURING POINT: Steel Plate plus 0.25 ft (						evel)	TOTAL SHIFT	FOOTAGE:	1.33 ft.
CONSTRUCTION DESCRIPTION: N/A							BORING DE		START TIME: 07:00
CASING SET- TYPE DRIVE P			DRIVE PO	~****		END DEPTI	START: 58.3 END: 59.3		END TIME: 15:30 CONTRACTOR TIME: 0.5 TOTAL TIME: 8.5
7.0 " OD		CS	Shoe, 7.5 "	OD	56.99 ft	56.99 f			
	OCUMENTEL	DOWNTH	ME	i i		CASING	SUMMARY	PERSONNEL:	
D	OCCIMENTEL	DOWNI	nL	Botto			(start of shift) =	56 99 ft	OPERATOR: K. Olson
	N/	'A					(end of shift) =	D Morris/D Curry	
WEATH	IER CONDITI		2716 or		The second secon		(include bkpull) =	WA LICENSE #: 1217 OTHER: D.E. Skoglie	
373-271		01.0 (0.0 2	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	-	casing		=		
	5.50					SAMPLE	SUMMARY		R. Sharp/ S. Snook (Opr)
	Temperature			Samr	ale: S02083	00 (#9)	50.00 50.7 (		그렇게 그렇게 되는 것이 하면 아이들이 없는데 없는데 하는데 보다?
Barometric pressure 29.33, Wind NW 3						-07 (#0)	58.29 - 59.7 (1	.41 ft) 100%	K. Johnson (PIC)
	tric pressure 2	9.33, Wind	INW 3	~4	AC. 502003	-09 (#6)	38.29 – 39.7 (1	.41 ft) 100%	12.40
	tric pressure 2	9.33, Wind	I NW 3		Jic. 502003	-09 (#8)	58.29 – 59.7 (I	.41 ft) 100%	K. Johnson (PIC) K. Hartelius (HPT)
mph		9.33, Wind	INW 3						K. Hartelius (HPT)
mph	ТІМЕ	29.33, Wind	1 NW 3				OF OPERATIO		K. Hartelius (HPT)
mph	ТІМЕ	Daily and maintenar	weekly safe	ty mee	DESCR.	IPTION cted. Discies note	OF OPERATION cussed anticipated. Also, inspect	NS/REMARI ed activities	K. Hartelius (HPT)  CS  Complete equipment drive due to hearing the chain
FROM 07:00	TIME TO	Daily and maintenar travel aro Set-up the	weekly safe nce and inspe und the sprod hammer. D	ty mee ection, ckets.	DESCR eting condu- no deficien A loose set ample S020	IPTION cted. Discies note screw w 83-09 (#	OF OPERATION cussed anticipat d. Also, inspect as tightened. Al	NS/REMARI ed activities lower chair ternate HP7 ft. (1.41 ft) (	K. Hartelius (HPT)  CS  Complete equipment
FROM 07:00 08:49	TIME TO 08:49	Daily and maintenar travel aro Set-up the Sleeve sar	weekly safe and inspe und the sprod hammer. D mple and pla	ty mee ection, ckets. Orive sa	DESCR. eting conduction deficient A loose set ample S020 (1 O-ring a	IPTION cted. Di- cies note screw w 83-09 (#	OF OPERATION cussed anticipat d. Also, inspect as tightened. Al	NS/REMARI ed activities lower chain ternate HPT ft. (1.41 ft) ( d lubricant).	K. Hartelius (HPT)  C.S  Complete equipment drive due to hearing the chain arrives with instruments.  8:53. Blows 2/2/2 (07:44).  Sample in drum @ 09:25 hrs.
FROM 07:00 08:49 09:25	TIME TO 08:49 09:25	Daily and maintenar travel aro Set-up the Sleeve sar Back-pull Add casir	weekly safe nce and inspe und the sprod e hammer. D mple and pla casing (4 au ng 5.0 ft (tota	ty mee ection, ckets. Drive sa ce cap nd 2 ft	DESCR.  eting conduction deficient A loose set ample S020 (1 O-ring a sections from the following sections from th	IPTION  cted. Discises note screw w 83-09 (# and a swipm string p (total 6	or operation cussed anticipat d. Also, inspect as tightened. Also, 58.29 – 59.7 pe of Well Guar D. Run Dp to bo 1.1 ft.). Casing	NS/REMARI ed activities lower chain ternate HPT ft. (1.41 ft) ( d lubricant). ttom of casi will not pus	K. Hartelius (HPT)  C.S  Complete equipment drive due to hearing the chain arrives with instruments.  8:53. Blows 2/2/2 (07:44).  Sample in drum @ 09:25 hrs.  ng.  down with head (6 ft open
FROM 07:00 08:49 09:25	TIME TO 08:49 09:25 10:22	Daily and maintenar travel aro Set-up the Sleeve sar Back-pull Add casir hole). Lo	weekly safe nce and inspe und the sprod hammer. D mple and pla casing (4 ar ag 5.0 ft (tota wer hammer	ty mee ection, ckets. Drive sa ce cap nd 2 ft il 60.45	DESCR.  eting conduction deficient A loose set ample S020 (1 O-ring a sections for 5 ft.) and Distance. The	IPTION  cted. Discises note screw w 83-09 (# and a swip om string p (total 6 a casing 1	or operation cussed anticipated. Also, inspect as tightened. Also, 58.29 – 59.7 ope of Well Guar by Run Dp to both 1.1 ft.). Casing owered ~ 1 ft. I	NS/REMARI ed activities lower chain tternate HPT ft. (1.41 ft) ( d lubricant). ttom of casi will not pus bry fire the h	K. Hartelius (HPT)  C.S  Complete equipment drive due to hearing the chain arrives with instruments.  8:53. Blows 2/2/2 (07:44). Sample in drum @ 09:25 hrs.  ng.  n down with head (6 ft open ammer. The casing went to
FROM 07:00 08:49 09:25 10:22	TIME TO 08:49 09:25 10:22	Daily and maintenan travel aro Set-up the Sleeve sar Back-pull Add casir hole). Lo bottom.	weekly safe nce and inspe und the sproot hammer. Da mple and pla casing (4 and ag 5.0 ft (tota wer hammer A stop tab wa	ty mee ection, ckets. Orive sa ce cap nd 2 ft 1 60.45 onto co	DESCR. eting conduction of deficient of the conduction of the cond	IPTION  cted. Discises note screw w 83-09 (# and a swip om string p (total 6 c casing 1 lower h	or operation cussed anticipat d. Also, inspect as tightened. Also, 58.29 – 59.7 does of Well Guar b. Run Dp to be 1.1 ft.). Casing owered ~ 1 ft. I. Immer with the	NS/REMARI ed activities lower chain iternate HPT ft. (1.41 ft) ( d lubricant). ittom of casi will not pus ory fire the h otary head	K. Hartelius (HPT)  C.S  Complete equipment drive due to hearing the chain arrives with instruments.  8:53. Blows 2/2/2 (07:44).  Sample in drum @ 09:25 hrs.  ng.  n down with head (6 ft open armmer. The casing went to rame.
FROM 07:00 08:49 09:25 10:22	TIME TO 08:49 09:25 10:22	Daily and maintenan travel aro Set-up the Sleeve sar Back-pull Add casir hole). Lo bottom. Two peop	weekly safe ince and inspe und the sproof hammer. Da mple and pla casing (4 and a 5.0 ft (tota wer hammer A stop tab wa	ty mee ection, ckets. Orive sa ce cap nd 2 ft 1 60.45 onto cas knoothe zon	DESCR. eting conduction of deficient of the conduction of the cond	IPTION  cted. Discises note serve we serve we say of # mond a swing point of the casing I lower he tab we have the tab we serve we say the say of the tab we say the say of the	or operation cussed anticipat d. Also, inspect as tightened. Also, 58.29 – 59.7 does of Well Guar b. Run Dp to be 1.1 ft.). Casing owered ~ 1 ft. I immer with the while the others a	NS/REMARI ed activities lower chain tternate HPT ft. (1.41 ft) ( d lubricant). ttom of casi will not pus ory fire the b otary head te lunch. O	K. Hartelius (HPT)  C.S  Complete equipment drive due to hearing the chain arrives with instruments.  8:53. Blows 2/2/2 (07:44).  Sample in drum @ 09:25 hrs.  and down with head (6 ft open armmer. The casing went to rame.  The clunch was over, the third BS
FROM 07:00 08:49 09:25 10:22	TIME TO 08:49 09:25 10:22	Daily and maintenar travel aro Set-up the Sleeve sar Back-pull Add casir hole). Lo bottom. A Two peop ate lunch	weekly safe nce and inspe und the sproot hammer. D mple and pla casing (4 and g 5.0 ft (tota wer hammer A stop tab wat ole stayed in while the oth	ty mee ection, ckets.  Drive sa ce cap and 2 ft al 60.45 onto constant control	DESCR.  eting conduction of deficient of the conduction of the conducted o	IPTION  cted. Diction notes and a swing or (total 6 casing 1 lower he tab v a rig ins	cussed anticipat d. Also, inspect as tightened. Al 3) 58.29 – 59.7 be of Well Guar b. Run Dp to be 1.1 ft.). Casing bowered ~ 1 ft. I mmer with the chile the others a pection due to the	NS/REMARI ed activities lower chain ternate HPT ft. (1.41 ft) (1.41 ft) (1.41 ft) (1.41 ft) ttom of casi will not pus bry fire the brotary head te lunch. O te tab being	K. Hartelius (HPT)  C.S  Complete equipment a drive due to hearing the chain arrives with instruments.  8:53. Blows 2/2/2 (07:44).  Sample in drum @ 09:25 hrs.  ng.  n down with head (6 ft open armer. The casing went to frame.  Ince lunch was over, the third BS knocked off.
FROM 07:00 08:49 09:25 10:22	TIME TO 08:49 09:25 10:22	Daily and maintenar travel aro Set-up the Sleeve sar Back-pull Add casir hole). Lo bottom. Two peop ate lunch	weekly safe nce and inspe und the sproot hammer. D mple and pla casing (4 and g 5.0 ft (tota wer hammer A stop tab was ole stayed in while the oth ner was lifted	ty mee ection, ckets. Orive sa ce cap nd 2 ft 1 60.45 onto cas knoo the zor ner two d, howe	DESCR.  eting conduction of deficient of the conduction of the conducted of the conducted over it would be conducted over it woul	IPTION  cted. Diction notes to the series with	cussed anticipat d. Also, inspect as tightened. Also, inspect as tightened. Also, 58.29 – 59.7 be of Well Guar b. Run Dp to be 1.1 ft.). Casing owered ~ 1 ft. I ammer with the chile the others a pection due to the ver into the secu	NS/REMARI ed activities lower chain iternate HPT ft. (1.41 ft) ( d lubricant). ittom of casi will not pus bry fire the brotary head ite lunch. O the tab being red position	K. Hartelius (HPT)  C. Complete equipment drive due to hearing the chain arrives with instruments.  8:53. Blows 2/2/2 (07:44).  Sample in drum @ 09:25 hrs.  and down with head (6 ft open armer. The casing went to rame.  Ince lunch was over, the third BS smocked off.  A brace was used to lift the
FROM 07:00 08:49 09:25 10:22	TIME TO 08:49 09:25 10:22	Daily and maintenar travel aro Set-up the Sleeve sa: Back-pull Add casir hole). Lo bottom. A Two peop ate lunch The hammer from the same thammer from the same thammer from the same travel and the same travel are travel and travel are travel and travel are travel and travel are travel and travel are travel are travel and travel are travel a	weekly safe nce and inspe und the sproot hammer. D mple and pla casing (4 and gs 5.0 ft (tota wer hammer A stop tab wat ole stayed in while the oth mer was lifted from one side	ty mee ection, ckets.  Prive sa ce cap nod 2 ft 1 60.45  onto c as knoc the zor ner two d, howe . The	DESCR.  eting conduction of deficient A loose set ample S020 (1 O-ring a sections from 5 ft.) and Districtions from the conducted ever it would hammer was	icted. Discrete with the tab varied in tab varied in the tab varied in tab v	cussed anticipat d. Also, inspect as tightened. Al 3) 58.29 – 59.7 B. Osaing D. Run Dp to be 1.1 ft.). Casing Dewerd ~ 1 ft. I Immer with the richile the others a bection due to the ver into the secu d. Further inspect	NS/REMARI ed activities flower chain ternate HPT ft. (1.41 ft) ( d lubricant) ttom of casi will not pus bry fire the brotary head te lunch. O te tab being red position ection reveal	K. Hartelius (HPT)  C.S  Complete equipment a drive due to hearing the chain arrives with instruments.  8:53. Blows 2/2/2 (07:44).  Sample in drum @ 09:25 hrs.  ng.  n down with head (6 ft open armer. The casing went to frame.  Ince lunch was over, the third BS enocked off.  A brace was used to lift the ed the hammer bracing in good
FROM 07:00 08:49 09:25 10:22	TIME TO 08:49 09:25 10:22	Daily and maintenar travel aro Set-up the Sleeve sar Back-pull Add casir hole). Lo bottom. A Two peop ate lunch The hamre f shape. The of the maintenary of the maintenary for the maint	weekly safe and inspetund the sproof hammer. Description of the sproof ham had been supply and the sproof hammer. A stop tab was been stated in while the other was lifted from one side he square corst bracing.	ty mee ection, ckets.  Prive sa ce cap nd 2 ft 1 60.45  onto c as knoc the zor the r two d, howe the rer of	DESCR.  In thing conducted the mast britans and the mast britans and the mast britans are conducted the	meted. Discrete we will be some string of total of casing I lower had a rig ins lid not lo as lower a acing war.	cussed anticipat d. Also, inspect as tightened. Also, inspect as tightened. Also, 58.29 – 59.7 pe of Well Guar b. Run Dp to be 1.1 ft.). Casing owered ~ 1 ft. I mmer with the properties of the control due to the vertical field. Further inspects a ground down to the security of the control o	ed activities lower chain ternate HP7 ft. (1.41 ft) (d lubricant). Itom of casi will not pushry fire the hotary head it te lunch. One tab being red position reveal of allow the	K. Hartelius (HPT)  C.S  Complete equipment drive due to hearing the chain arrives with instruments.  8:53. Blows 2/2/2 (07:44).  Sample in drum @ 09:25 hrs.  and down with head (6 ft open armer. The casing went to frame.  Ince lunch was over, the third BS enocked off.  A brace was used to lift the ed the hammer bracing in good nammer arms to slide past the er
FROM 07:00 08:49 09:25 10:22	TIME  TO  08:49  09:25  10:22  11:45	Daily and maintenan travel aro Set-up the Sleeve san Back-pull Add casim hole). Lo bottom. A part lunch The hammer f shape. The of the maintenance	weekly safe and inspetund the sproof hammer. Description of the man ple and pla casing (4 and 25.0 ft (total week) while the other was lifted from one side as square corst bracing.	ty mee ection, ckets. Prive sa ce cap nd 2 ft 1 60.45 conto c as knoc the zor the revo d, how e. The mer of	DESCR.  In thing conduct and deficient A loose set ample S020 (1 O-ring a sections from 5 ft.) and Drassing. The excellent of the conducted conducted the conducted the mast bromponents with the mast b	method of the control	cussed anticipat d. Also, inspect as tightened. Also, inspect as tightened. Also, 58.29 – 59.7 pe of Well Guar b. Run Dp to be 1.1 ft.). Casing owered ~ 1 ft. I mmer with the relation due to the vertical of the total as ground down to ected. Set screweeted. Set screweeted.	ed activities lower chain ternate HP7 ft. (1.41 ft) (d lubricant). Itom of casi will not pushry fire the hotary head it te lunch. One tab being red position reveal of allow the	K. Hartelius (HPT)  C.S  Complete equipment a drive due to hearing the chain arrives with instruments.  8:53. Blows 2/2/2 (07:44).  Sample in drum @ 09:25 hrs.  ng.  n down with head (6 ft open armer. The casing went to frame.  Ince lunch was over, the third BS enocked off.  A brace was used to lift the ed the hammer bracing in good
mph FROM 07:00 08:49 09:25 10:22	TIME  TO  08:49  09:25  10:22  11:45	Daily and maintenan travel aro Set-up the Sleeve san Back-pull Add casim hole). Lo bottom. A Two peop ate lunch The hammer f shape. The of the maintenance The upper Area security and travel and the shape. The shape t	weekly safe and inspetund the sproof hammer. Description of the sproof ham had been supply and the sproof hammer. A stop tab was been stated in while the other was lifted from one side he square corst bracing.	ty mee ection, ckets. Prive sa ce cap nd 2 ft 1 60.45 conto c as knoc the zor the revo d, how e. The mer of	DESCR.  In thing conduct and deficient A loose set ample S020 (1 O-ring a sections from 5 ft.) and Drassing. The excellent of the conducted conducted the conducted the mast bromponents with the mast b	method of the control	cussed anticipat d. Also, inspect as tightened. Also, inspect as tightened. Also, 58.29 – 59.7 pe of Well Guar b. Run Dp to be 1.1 ft.). Casing owered ~ 1 ft. I mmer with the relation due to the vertical of the total as ground down to ected. Set screweeted. Set screweeted.	ed activities lower chain ternate HP7 ft. (1.41 ft) (d lubricant). Itom of casi will not pushry fire the hotary head it te lunch. One tab being red position reveal of allow the	K. Hartelius (HPT)  C.S  Complete equipment drive due to hearing the chain arrives with instruments.  8:53. Blows 2/2/2 (07:44).  Sample in drum @ 09:25 hrs.  and down with head (6 ft open armer. The casing went to frame.  Ince lunch was over, the third BS enocked off.  A brace was used to lift the ed the hammer bracing in good nammer arms to slide past the er
mph  FROM  07:00  08:49  09:25  10:22  11:45	TIME  TO  08:49  09:25  10:22  11:45  15:30  T BY: D.E. Sk	Daily and maintenar travel aro Set-up the Sleeve sar Back-pull Add casir hole). Lo bottom. A Two peop ate lunch The hammer f shape. The of the maintenance of the mai	weekly safe and inspetund the sproof hammer. Description of the man ple and pla casing (4 and 25.0 ft (total week) while the other was lifted from one side as square corst bracing.	ty mee ection, ckets. Prive sa ce cap nd 2 ft 1 60.45 conto c as knoc the zor the revo d, how e. The mer of	DESCR.  In thing conduct and deficient A loose set ample S020 (1 O-ring a sections from 5 ft.) and Drassing. The excellent of the conducted conducted the conducted the mast bromponents with the mast b	icted. Diccies note screw w 83-09 (# mod a swim string p (total 6 casing l lower h the tab v a rig ins ld not lo as lowere acing w were inside. Full of the control of the	cussed anticipat d. Also, inspect as tightened. Also, inspect as tightened. Also, 58.29 – 59.7 pe of Well Guar b. Run Dp to be 1.1 ft.). Casing owered ~ 1 ft. I mmer with the relation due to the vertical of the total as ground down to ected. Set screweeted. Set screweeted.	NS/REMARI ed activities flower chain ternate HPT ft. (1.41 ft) ( d lubricant) ttom of casi will not pus bry fire the h rotary head te lunch. O te tab being red position rection reveal to allow the vs in the upp	K. Hartelius (HPT)  C.S  Complete equipment a drive due to hearing the chain arrives with instruments.  8:53. Blows 2/2/2 (07:44).  Sample in drum @ 09:25 hrs.  and down with head (6 ft open ammer. The casing went to rame.  Ince lunch was over, the third BS chocked off.  A brace was used to lift the ed the hammer bracing in good nammer arms to slide past the er er sprocket were tightened.
mph  FROM  07:00  08:49  09:25  10:22  11:45	TIME  TO  08:49  09:25  10:22  11:45	Daily and maintenan travel aro Set-up the Sleeve san Back-pull Add casir hole). Lo bottom. A Two peop ate lunch The hammer f shape. The of the maintenant the upper Area security.	weekly safe nee and inspetund the sproof harmer. Description of the sproof of the spro	ty mee ection, ckets. Drive sa ce cap nd 2 ft il 60.45 onto c as knoc the zor ner two d, howe . The ner of	DESCR.  Setting conduction of deficient A loose settemple S020 (1 O-ring a sections from the section of the sec	cted. Diccies note screw w 83-09 (# mod a swim string p (total 6 casing l lower h the tab v a rig ins ld not lo as lowere acing w were inside. RE	cussed anticipat d. Also, inspect as tightened. Also, inspect as tightened. Also, 58.29 – 59.7 in the control of the control o	NS/REMARI ed activities flower chain ternate HPT ft. (1.41 ft) ( d lubricant) ttom of casi will not pus bry fire the la rotary head te lunch. O te tab being red position fection reveal to allow the ws in the upp	K. Hartelius (HPT)  C.S  Complete equipment drive due to hearing the chain arrives with instruments.  8:53. Blows 2/2/2 (07:44).  Sample in drum @ 09:25 hrs.  and down with head (6 ft open armer. The casing went to frame.  Ince lunch was over, the third BS enocked off.  A brace was used to lift the ed the hammer bracing in good nammer arms to slide past the er

<b>Duratek</b> D	uratek Federal Servi	ces, Inc., Northw	est Operations
C3830 SAMPLE	FORM	FAR No. 76	Page 2 of 2
Sample No. 502083 - 09	Sample Tracking No. 8		
Target Depth 59 t			
(1) 3.35 top of rig floor above	ground		
2) 4,46 casing stickup above		T	
Csg Total (3) 61.45 - Stickup	(2) $4.46 = TD(4)$		- t
Does not include drive head	56.99		(5) .25
Backpull stickup (2+5) 、スら			Rig Floor
	0 (4+6) 59,7		(2) 4, 46
Blow	Count	Ground Le	evel
.5 ft	1 ft 1.5 ft	1000	70000
Start Time			
0853 2	2 2		
End Time			
Estimated Recovery: 100%			11115
Remarks:			(3) 61,45
	m e 0925 hrs.	(4) 58.29	
(1) SAMPLE IN dro	9 (RACK TO BACK	\"T	
יוונ פות מות פ	sample)		
		1 1 207	
1 = Top of rig floor above groun		(1) 59.7	
2 = Stickup of csg above ground top csg = SU	1 + measure from floor to		
3 = Total csg length			
4 = Depth of csg = Total Depth	(TD)		(5) .25
Total $csg - SU^{(2)} = TD$ 5 = Casing back pull			
6 = Sampler drive distance		(6) /	<u>.4</u> 1¦¦
7 = Total depth of driven sampl	e = 4 + 6	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
			j
PREPARED BY (Please print): D,	E. SKOGLIE	REVIEWED BY (Places	print): MG GARDNER
TITLE: FTC O D.	ATE: 08 23 02	TITLE: MGR	DATE:
SIGNATURE: David 8.	sko slie	SIGNATURE: MGG.	.0 10-08-01
DFSNW-WS-00_	U	1900	we

DRIL	LING ANI	SAMPI	ING (PE	RCU	SSION) I	AILY	WORK REC	CORD	Page 1 of 2		
WELL I.I	D.: C3830		WELL NUM	BER: N/A REPORT NUMBER: 77					DATE: August 26, 2002 Monda		
CONTRA	CT NUMBER:	8248-55		STAR	RT CARD NO	: S00631		RIG MODEL/	NO: SIMCO 5000 (Rig 106)		
PURPOS	SE: Daily safet	y meeting. C	asing is drov	e to a de	epth of 71.95	ft RE	FERENCE: DFSN		LOCATION: TX Tank Farm, 20		
bgs. Obta	ain sample S02	083-10.					v. 0		West		
REFERE	NCE MEASUR	ING POINT	Steel Plate	olus 0.2	5 ft (ground l	level)	TOTAL SHIFT	FOOTAGE: 12	2.25 ft.		
	RUCTION DI			BORING DEPTH:					START TIME: 07:00		
CASINI	CASING SET- TYPE DI		DRIVER	VE BOINT START			START: 59.7	ft	END TIME: 16:30		
SIZE	AI	CASING	DRIVE PO		START DEPTH	END DEPTI	1	. A	CONTRACTOR TIME: 0.5 TOTAL TIME: 9.5		
7.0 " OD	DEPTH NA	CS	Shoe, 7.5 "	22.000.000	56.99 ft	71.95ft	END. 71.9	ο π			
7.0 OD	1326	0.0	51100, 7.5	OD	50.55 R	71.9510					
DC	OCUMENTE	DOWNTI	ME		(	CASING	SUMMARY		PERSONNEL:		
				Botto	om of 7 "Ol	D casing	(start of shift) =	OPERATOR: K. Olson			
	N	'A					g (end of shift) =		D Morris/D Curry		
	ER CONDIT	ONS (373-	2716 or			) stick u	p (include bkpull) =	1.14 ft	WA LICENSE #: 1217		
373-271	.0)			Tota	l casing		OTHER: D.E. Skoglie/K. Flower				
00.46.	Temperature	74E II	1:4 400/				SUMMARY		S. Snook (Opr) K. Johnson (PIC)		
	tric pressure 2			Sam	ple: S02083	-10 (#9)	66.06 – 67.46 (1	.4 ft) 100%			
	sts to 16 mph	,,,,, ,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,							K. Harteilius (HPT)		
,	TUC				HALD I KANTING SA			r nasker - z a zavzanice 2			
FROM TO DESCRIPTION OF OPER						OF OPERATION	IS/REMARKS				
TROM	10	Daily safe	ty meeting	onduc	ted (07:17).	Discus	sed anticipated a	ctivities. Com	plete equipment maintenance		
07:00	10:00	and inspe	ction, no det	icienci	ies noted. C	ut out th	ne center of the le	ower stop (ins	talled last Friday) with the port		
07.00	10.00	a-band. Welding/cutting permit in place. W					Weld hammer stop arm (upper mast), spacer on rotary he				
		(alignmer	t) and lower	mast	chain guard.				I 5 0 0 ((5 45) 1D		
10:00	10:28	5 01 (66 1	1). Set-up l	ick-pu iamme	ii casing to j	piace ca	sing joint in the w	renches. Add	l casing 5.0 ft (65.45) and Dp		
						35 + 1.0	2). Blows 13/15/	12/19 Secure	re hammer and disassemble		
10:28	10:34	drive head	assembly.				2). 210.10 12.12.		imminer and disassemble		
10:34	10:48	Add casir	g 5.0 ft (70.	45) and	d Dp 5.0 (71	.11). S	et-up hammer.				
10.40	11:04					35 + 1.0	4) 10:52. Blows 2	21/30/39/38/38	Secure hammer and		
10:48			ole drive hea								
	11:40	Back-pull casing .25 ft (11:10). Trip Dp out of boring 11:40hrs.									
11:04	12.16	Lunah		Trip sampler in boring. Set-up drive head and hammer. Drive sample (66.0							
11:04	12:16	Lunch Trin same	ler in horing	Set-	un drive hes	d and h	ammer Drive ca	mnle (66.06	67.46) @ 12:50 12:51		
11:04 11:40	12:16	Trip samp									
11:04 11:40 12:16	13:18	Trip samp Blows 2/2		pler w	as pulled fo				67.46) @ 12:50 – 12:51. @ 13:12. The sample was		
11:04 11:40 12:16		Trip samp Blows 2/2 placed in The Dp w	the drum @ as tripped in	pler w 13:18. to the	as pulled fo	rm the b	poring and landed	on the deck (	2) 13:12. The sample was		
11:04 11:40 12:16 13:18 13:42	13:18 13:42 13:56	Trip samp Blows 2/2 placed in The Dp w Add casin	the drum @ as tripped in g 6.0 ft (76.	13:18. to the 45) and	boring. d Dp 6.0 (77	7.11). A	ooring and landed	on the deck (	2) 13:12. The sample was together. Set-up hammer.		
11:04 11:40 12:16 13:18 13:42	13:18 13:42	Trip samp Blows 2/2 placed in The Dp w Add casin Drive casi	the drum @ as tripped in g 6.0 ft (76. ing to 71.95	13:18. to the 45) and ft bgs.	boring. d Dp 6.0 (77 76.45 – (3.	7.11). A	oring and landed 4 ft and 2 ft casis 5). Blows 8/27/2	on the deck (	2) 13:12. The sample was		
11:04 11:40 12:16 13:18 13:42 13:56	13:18 13:42 13:56 13:59	Trip samp Blows 2/2 placed in The Dp w Add casin Drive cas: after 2 ft t	the drum @ as tripped in g 6.0 ft (76. ing to 71.95 o tighten a c	npler w 13:18. to the 45) and ft bgs. asing s	boring. d Dp 6.0 (77 76.45 – (3. section (due	7.11). A 35 + 1.1 to addir	4 ft and 2 ft casin 5). Blows 8/27/2ng two sections).	on the deck (eng were added 22/23/25/43.	2) 13:12. The sample was together. Set-up hammer.		
11:04 11:40 12:16 13:18 13:42 13:56	13:18 13:42 13:56 13:59 14:14	Trip samp Blows 2/2 placed in The Dp w Add casin Drive cas: after 2 ft t Back-pull	the drum @ as tripped in g 6.0 ft (76. ing to 71.95 o tighten a c	npler w 13:18. to the 45) and ft bgs. asing s	boring. d Dp 6.0 (77 76.45 – (3. section (due	7.11). A 35 + 1.1 to addir	oring and landed 4 ft and 2 ft casis 5). Blows 8/27/2	on the deck (eng were added 22/23/25/43.	2) 13:12. The sample was together. Set-up hammer.		
11:04 11:40 12:16 13:18 13:42 13:56 13:59 14:14	13:18 13:42 13:56 13:59 14:14 14:29	Trip samp Blows 2/2 placed in The Dp w Add casin Drive cas: after 2 ft t Back-pull Break	the drum @ as tripped in g 6.0 ft (76. ing to 71.95 o tighten a c casing .25 f	npler w 13:18. to the 45) and ft bgs. asing s	boring.  d Dp 6.0 (77)  76.45 – (3. section (due ure hammer	7.11). A 35 + 1.1 to addinard disa	4 ft and 2 ft casin 5). Blows 8/27/2 ng two sections).	on the deck (cong were added 22/23/25/43. (cong ad.	2) 13:12. The sample was together. Set-up hammer.		
11:04 11:40 12:16 13:18 13:42 13:56 13:59 14:14 14:29	13:18 13:42 13:56 13:59 14:14 14:29 15:38	Trip samp Blows 2/2 placed in The Dp w Add casin Drive cas: after 2 ft t Back-pull Break Trip Dp o	the drum @ as tripped in g 6.0 ft (76. ing to 71.95 o tighten a c casing .25 f ut of boring	npler w 13:18. to the 45) and ft bgs. asing s t. Secu	boring. d Dp 6.0 (77 76.45 – (3. section (due ure hammer	7.11). A 35 + 1.1 to addinand disc	4 ft and 2 ft casinus. 5). Blows 8/27/2 mg two sections). assemble drive here to bottom of the	on the deck (cong were added 22/23/25/43. (cong ad.	2) 13:12. The sample was together. Set-up hammer.		
11:04 11:40 12:16 13:18 13:42 13:56 13:59 14:14 14:29 15:38	13:18 13:42 13:56 13:59 14:14 14:29 15:38 16:30	Trip samp Blows 2/2 placed in The Dp w Add casin Drive cas: after 2 ft t Back-pull Break Trip Dp o Fuel equi	the drum @ as tripped in g 6.0 ft (76. ing to 71.95 o tighten a c casing .25 f	npler w 13:18. to the 45) and ft bgs. asing s t. Secu	boring. d Dp 6.0 (77 76.45 – (3. section (due ure hammer	7.11). A 35 + 1.1 to addinand disc	4 ft and 2 ft casin 5). Blows 8/27/2 ng two sections). assemble drive he in to bottom of the nation.	on the deck (cong were added 22/23/25/43. (cong deck deck deck deck deck deck deck deck	2) 13:12. The sample was together. Set-up hammer.		
	13:18 13:42 13:56 13:59 14:14 14:29 15:38 16:30 TBY: D.E. Sk	Trip samp Blows 2/2 placed in The Dp w Add casin Drive cas: after 2 ft t Back-pull Break Trip Dp o Fuel equij	t/2. The san the drum @ as tripped ir g 6.0 ft (76. ing to 71.95 o tighten a c casing .25 f ut of boring oment. Secu	ppler w 13:18. to the 45) and ft bgs. asing s t. Secu	boring. d Dp 6.0 (77 76.45 – (3. section (due ure hammer up a sample. Complete	7.11). A 35 + 1.1 to addinand discrete and rudocume RE	4 ft and 2 ft casis. 5). Blows 8/27/2 ng two sections). assemble drive her to bottom of the nation.  VIEWED BY: MC	on the deck (cong were added) 22/23/25/43. (cong deck deck deck deck deck deck deck deck	13:12. The sample was together. Set-up hammer. Casing driving was stopped		
11:04 11:40 12:16 13:18 13:42 13:56 13:59 14:14 14:29 15:38 REPORT	13:18 13:42 13:56 13:59 14:14 14:29 15:38 16:30 TBY: D.E. Sk Field Team I	Trip samp Blows 2/2 placed in The Dp w Add casin Drive cas: after 2 ft t Back-pull Break Trip Dp o Fuel equij	the drum @ as tripped in g 6.0 ft (76. ing to 71.95 o tighten a c casing .25 f ut of boring	ppler w 13:18. to the 45) and ft bgs. asing s t. Secu	boring. d Dp 6.0 (77 76.45 – (3. section (due ure hammer up a sample. Complete	7.11). A 35 + 1.1 to addinand discer and ru docume	4 ft and 2 ft casin 5). Blows 8/27/2 ng two sections). assemble drive he in to bottom of the nation.	on the deck (cong were added) 22/23/25/43. (cong deck deck deck deck deck deck deck deck	2) 13:12. The sample was together. Set-up hammer.		

Duratek Duratek Federal Servic	es, Inc., Northwe	est Operations
C3830 SAMPLE FORM	FAR No. 77	Page 2 of 2
Sample No. 502083-10 Sample Tracking No. 9		
Target Depth 66 to 67		
1) 3.35 top of rig floor above ground		
2) // 39 assing sticker shave ground		
Case Total (3) 70,45 - Stickup (2) 4,39 = TD (4)		
oes not include drive head		(5),25
ackpull stickup (2+5) , 25		Rig Floor
ample depth (4) 66.06 to (4+6) 67.46		(1) (1) 39
Blow Count 1.4	Ground Leve	
.5 ft 1 ft 1.5 ft		
Start Time		
12 50 2 2 2 End Time		
1251		
Remarks:  (I) Sample in drum @ 13 18 hrs,  1 = Top of rig floor above ground 2 = Stickup of csg above ground 1 + measure from floor to top csg = SU 3 = Total csg length 4 = Depth of csg = Total Depth (TD) Total csg - SU <sup>(2)</sup> = TD 5 = Casing back pull 6 = Sampler drive distance 7 = Total depth of driven sample = 4 + 6	(4) CL.06	(3) 70,45
REPARED BY (Please print): D.E. SKOGLIE TILE: FTL DATE: 082602 IGNATURE: Navd Moglie	REVIEWED BY (Please of TITLE: MB R SIGNATURE: MB R	DATE:

DIGL	LING AND	SAMPL	ING (PE	RCUS	SSION) I	DAILY	y wo	RK RE	CORD	Page 1 of 3	
WELL I.	D.: C3830		WELL NUM	BER:	BER: N/A REPORT NUMBER: 78					DATE: August 27, 2002 Tuesda	
CONTRACT NUMBER: 8248-55					T CARD NO	D: S0063	1		RIG MODEL	/NO: SIMCO 5000 (Rig 106)	
PURPOSE: Daily safety meeting. Casing is drown ft bgs. Obtain sample S02083-11 and S02083-12.					to a depth of 80.91 REFERENCE: DFSNW-DOW-006, Rev. 0					LOCATION: TX Tank Farm, 20 West	
REFERE	ENCE MEASUR	ING POINT:	olus 0.25 ft (ground level) TOTAL SHIFT FOOTAGE: 8.90				96 ft.				
CONST	RUCTION DE	SCRIPTIO	N: N/A	BORING DEPTH:				START TIME: 07:00 END TIME: 16:30 CONTRACTOR TIME: 0.5 TOTAL TIME: 9.5			
CASING SET- SIZE AT TYPE DRIVE PO DEPTH CASING DIMENS			SION DEPTH D		DEPT	END:			95 ft .91 ft		
7.0 " OD	) NA	CS	Shoe, 7.5 "	OD	71.95 ft	80.91	ft				
D	OCUMENTEL	DOWNTI	MF	Ι	-	CASINO	G SUMN	IARY		PERSONNEL:	
	0 001111111111			Botto	om of 7 " O				= 71 95 ft	OPERATOR: K. Olson	
	N/	A			om of 7" O					D Morris/D Curry	
WEATH	HER CONDITI		716 or		ng (7 in OD					WA LICENSE #: 1217	
373-27		0115 (373-2	.710 01		l casing	) otion (	up (meiu		= 85.46 ft.	- 10.10 C C 2017 C C C 2017 C C C C C C C C C C C C C C C C C C C	
373-2710)					SAMPLE SUMMARY					OTHER: D.E. Skoglie/K. Flower	
10:00:	Temperature	77F, Humie	dity 47%,	Same	Sample: S02083-11 (#10) 71.95 – 73.3 (1.35 ft) 100%					S. Snook/R. Sharp (Opr)	
Barome	tric pressure 2	9.39, Wind	N5 with	Sample: S02083-11 (#10) 71:35 = 73:3 (1:33 ft) 100% Sample: S02083-12 (#11) 76:98 = 78:35(1:37 ft) 100%					K. Johnson (PIC)		
gusts to	11			Jump	pic. 502003	-12 (111	1) /0.5	, -70.55(	1.57 11) 10070	K. Hartelius (HPT)	
	TIME				DESCR	IPTION	I OF O	DED ATIO	NS/REMARKS		
FROM	TO										
07:00	07:37	and inspec	ction, no det	icienci	es noted.					nplete equipment maintenance	
07:37	08:35	- 07:38. 1	Blows 3/3/2	. The s	sampler was	s pulled	from th	e boring a	e sample S020 and landed on	083-11 (71.95 – 73.3) @ 07:37 the deck @ 08:08. The sampl	
08:35	08:46	was place	d in the dru	n @ 08	6:10 hrs. 11	rip Dp/t	ip into	asing.	-up hammer.		
Same State	Constitution of	Drive casi	ng to 76.08	f bac	81 46 (2	3.01 (to	12) D1	2 II). Set	-up nammer.	are hammer and disassemble	
08:46	09:00	drive head	assembly.								
		Back-pull	casing .25 f	t (09:0	7). Tip is s	tuck, re	lease by	jacking o	out (09:25). T	rip Dp out of boring. The fuel	
09:00	10:18	line to har	nmer is leak	ing (ha	ımmer tank	is full).	. Shut c	lown supp	oly pump. No	fuel to ground, absorbed with	
		pads (on t	he drill deck	x) 10:02 hrs. Break (10:02 – 10:18).							
10:18 11:45 Trip sampler in boring 11:01. Blows 3/4/3.					mpler was p	ad and loulled fo	hammer orm the	Drive sa boring an	ample S02083- d landed on the	12 (76.98 – 78.35) @ 11:00 – e deck @ 11:30. The sample	
was placed in the drum @ 11:35.  11:45											
12:20	12:54		p was trippe	d into t	he boring						
12:54	13:14		g 4.0 ft (tota			.0 (86.1	2). Set-	up the ha	mmer.		
13:14	14:15	Drive casi string.	ng to 80.91	ft bgs.	85.46 – (3.3	35 + 1.2	2). Blov	vs 12/22/3	86/38. Back-p	ull casing .25 ft. Trip out inner	
12/2/2/3	14:45	Break (14	:45). Run s	ampler	in boring.	Crew e	exits TX	Tank Far	m (15:48).		
Elicologic)											
14:15	16:30	Secure site	e and compl	cic doc	difficiltation						
14:15 15:48			e and compl	ete doc	uncitation		EVIEWE	D BY: MO	G Gardner		
14:15 15:48 REPOR	16:30 T BY: DE Sko	glie			uncitation	RE			G Gardner	DATE: (a.af.a?	
14:15 15:48 <i>REPOR</i> TITLE:	16:30 T BY: DE Sko	glie	Skogl		unchtation	RE TI		roject Ma		DATE: /0-08-02	

Durate	<b>ķ</b> 1	Ouratek F	ederal Servi	ces, Inc., Northy	vest Operations
C3830	SAMPL	E FORM		FAR No. <u>78</u>	Page <u>Z</u> of <u>3</u>
Sample No. 5020	083-11	Sample Tra	cking No. 10		
	72	- The second sec	<b>'</b> 3		
(1) <u>3.35</u> top of r	ig floor abov	e ground			
2) 4,5 casing s	stickup above	ground			
Csg Total (3) 76.	45 - Stick	ip (2) 4.5	= TD (4) 71,95		
Does not include	drive head		717		1(5), 25
Backpull stickup		5			Rig Floor
Sample depth (4)	71.95	to (4+6)	73.3		(2) 4.5 (1) 335
		(4			
	Blow	Count	1.35	Ground	
	.5 ft	1 ft	1.5 ft		
Start Time	3	3	2		
End Time					
6738					
F-t't-1 P	erv: 100	1/2			
Estimated Recove	ery: 100	76			(3) 76.45
Remarks:			6 \		
(1) SAmple	in drum	- @ 08 1	O NOS.	(4) 71.95	
€)					
1 = Top of rig flo	or above gro	und		(1) 73.3	
2 = Stickup of csg			re from floor to		
top csg = SU	-41				
3 = Total csg leng 4 = Depth of csg		h (TD)			
Total csg - St	$J^{(2)} = TD$	1 (12)			(5) . 25
5 = Casing back p				1	120
6 = Sampler drive 7 = Total depth of		1e = 4 + 6		<b>1</b>	
, roun aopin o	. att our built				
				L	
		. Tye			2
PREPARED BY (Pl	ease print):	DATE: SKOG LESKOGLE	LIE		se print): MG GARDNER
TITLE: FTL	118	DATE:	18/27/02	TITLE: MBR	DATE:
SIGNATURE:	wavid c	skoglie	-	SIGNATURE: Mba	10-08-02
DFSNW-WS-00				, 500	

Durate	k Di	ıratek F	ederal Serv	ices, Inc., Northy	west Operations
L3830	SAMPLE	FORM	(Alexandra Alexandra)	FAR No. <u>78</u>	Page <u>3</u> of <u>3</u>
Sample No. 502	2083-12 8	Sample Trac	king No. //		
	77 to		78		
(1) 3,35 top of ri	ig floor above	ground			
(2) 4,48 casing s					
Csg Total (3) 81,	46 - Stickup	(2) 4.48	= TD (4) 76.98		
Does not include o	irive head		76.48		(5) ,28
Backpull stickup (					Rig Floor
Sample depth (4)	76,98 to	(4+6)	78.35		1148
		- 63			(2) 4,48 (1) 3.35
	Blow C	ount	1,37	Ground	
	.5 ft	1 ft	1.5 ft		NA A A A
Start Time	3	4	3		
IIOO End Time					
1101					
	0/				
Estimated Recove	ry: 100%				(3) 81,46
Remarks:					100
(1) SAMpl	le in down	@ 11:3	5 hrs.	(4) 76.98	
1 = Top of rig floo	or above group	ď		(1) 78. 35	
2 = Stickup of csg			e from floor to		
top csg = SU	.1				
3 = Total csg leng 4 = Depth of csg =		TD)			14-1
Total csg - SU	$J^{(2)} = TD$	)			(5) .25
5 = Casing back p					127
<ul><li>6 = Sampler drive</li><li>7 = Total depth of</li></ul>		= 4 + 6		<b>1</b>	1
, Total doparol	dirven banipie	1.0			
					₽
PREPARED BY (Ple		SKOG.		REVIEWED BY (Please	se print): MG GARDNER
TITLE: FIL	1 - 1 E 1 1 DA	TE: 08 2	7 02	TTTT T	D. 1 mm
SIGNATURE:	and Mos	lie		SIGNATURE: MG	10-08-02
DFSNW-WS-00		-			

DRIL	LING AND	SAMPL	ING (PE	RCUS	SION) I	DAILY	WORK RE	CORD	Page 1 of 3
WELL I.I	D.: C3830	C3830 WELL NUMBER: N/A REPORT NUMBER: 79				ER: 79	DATE: August 28, 2002 Wednesday		
CONTRA	ACT NUMBER:	8248-55		STAR	T CARD NO	): S00631		RIG MODEL	/NO: SIMCO 5000 (Rig 106)
	SE: Daily safety ain sample S020			e to a de	pth of 86.11	2000	FERENCE: DFSI	NW-DOW-006,	LOCATION: TX Tank Farm, 20 West
REFERE	ENCE MEASUR	ING POINT	Steel Plate	olus 0.25	ft (ground :	surface)	TOTAL SHIP	T FOOTAGE: 6.	5 ft.
	RUCTION DE						BORING D		START TIME: 07:00
CASING		TYPE CASING	DRIVE PO		START DEPTH	END DEPTI	I Assente to	.91 ft .41 ft	END TIME: 16:30 CONTRACTOR TIME: 0.5 TOTAL TIME: 9.5
7.0 " OD		CS	Shoe, 7.5 "	OD	80.91 ft	86.11 f			
DOCUMENTED DOWNTIME CASING						CASING	SUMMARY		PERSONNEL:
	HPT - 1.2	5 hrs.		Botto	m of 7 " O	D casing	(start of shift)	= 71.95 ft.	OPERATOR: K. Olson
				Botto	m of 7" O	D casing	g (end of shift)	= 80.91 ft	D Morris/D Curry WA LICENSE #: 1217
WEATH	IER CONDITI	ONS (373-2	2716 or	Casin	g (7 in OD	) stick u	p (include bkpull)	= 1.25 ft	
373-271	(0)			Total	casing			= 86.11 ft	OTHER: DE Gostovich
10:00: Temperature 74F, Humidity 51%, Sample: S020					SAMPLE	SUMMARY		S. Snook/R. Sharp (Opr)	
				Samp	le: S02083	-13 (#12	2) 80.91 -82.21	1.3 ft) 90%	K. Johnson (PIC)
Baromet	Temperature tric pressure 2						2) 80.91 –82.21 3) 86.11 –87.41		
Baromet									K. Johnson (PIC)
Baromet mph					le: S02083	-14 (#13	8) 86.11 –87.41	1.3 ft) 100%	K. Johnson (PIC) ?? (HPT) K. Flower
Baromet mph	tric pressure 2	9.25, Wind	IN @ 6	Samp	le: S02083	I-14 (#1:	9) 86.11 -87.416 OF OPERATIO	1.3 ft) 100% DNS/REMARKS	K. Johnson (PIC) ?? (HPT) K. Flower
Baromet mph	tric pressure 2	9.25, Wind	ety meeting oction, no def	Samp	DESCR red (07:17) es noted. H	IPTION  DiscussiFT (alto	8) 86.11 –87.416 OF OPERATIONS anticipated ernate) arrives 0	2NS/REMARKS activities. Con 8:15.	K. Johnson (PIC) ?? (HPT) K. Flower  splete equipment maintenance
Baromet mph FROM	TIME TO	Daily safe and inspers Sampler s	ety meeting of ction, no defitting on both Blows 4/4/3	Samp conduct ficiencie ttom. S	DESCR ed (07:17) es noted. Het-up drive	IPTION  DiscussiFPT (alto thead ar	8) 86.11 –87.410  OF OPERATION  seed anticipated ernate) arrives 0  and hammer. Drives	0NS/REMARKS activities. Con 8:15. ve sample S020	K. Johnson (PIC) ?? (HPT) K. Flower
Baromet mph FROM 07:00	TIME TO 08:15	Daily safe and inspers Sampler s - 08:21. I was place	ety meeting oction, no defitting on bot Blows 4/4/3 d in the drur	Samp conduct ficiencie ttom. S . The sa n @ 08	DESCR  ed (07:17) es noted. If et-up drive ampler was :55 hrs.	IPTION  Discus IPT (alto	OF OPERATIOnsed anticipated ernate) arrives 0 and hammer. Driftom the boring	0NS/REMARKS activities. Con 8:15. ve sample S020	K. Johnson (PIC) ?? (HPT) K. Flower  splete equipment maintenance 083-13 (80.91 – 82.21) @ 08:20
Baromet mph FROM 07:00	TIME TO 08:15	Daily safe and inspection of the sampler sampler sampler sampler sampler sampler sample sampl	ety meeting of ction, no defitting on both Blows 4/4/3 d in the drum of fisection of g 5.0 (total	Samp  conduct ficiencie fittom. S  The sa  m @ 08 f casing 86.46 ft	DESCR. ed (07:17) es noted. Het-up drives ampler was :55 hrs. g. Trip Dp. ) and Dp 5	IPTION  Discuss HPT (alternation in the second in the seco	OF OPERATION Seed anticipated ernate) arrives 0 and hammer. Drift from the boring (11:15). 87.12 ft). Set-u	2008/REMARKS activities. Con 8:15. ve sample S020 and landed on	K. Johnson (PIC) ?? (HPT) K. Flower  mplete equipment maintenance 083-13 (80.91 – 82.21) @ 08:20 the deck @ 08:46. The sample
Baromet mph 7 FROM 07:00 08:15	TIME TO 08:15	Daily safe and inspection of the sampler sampler sampler sampler sampler sampler sample sampl	ety meeting of ction, no defitting on both Blows 4/4/3 d in the drum of fisection of g 5.0 (total	Samp  conduct ficiencie fittom. S  The sa  m @ 08 f casing 86.46 ft	DESCR. ed (07:17) es noted. Het-up drives ampler was :55 hrs. g. Trip Dp. ) and Dp 5	IPTION  Discuss HPT (alternation in the second in the seco	OF OPERATION Seed anticipated ernate) arrives 0 and hammer. Drift from the boring (11:15). 87.12 ft). Set-u	2008/REMARKS activities. Con 8:15. ve sample S020 and landed on	K. Johnson (PIC) ?? (HPT) K. Flower  pplete equipment maintenance 083-13 (80.91 – 82.21) @ 08:2
Baromet mph 7 FROM 07:00 08:15	TIME TO 08:15	Daily safe and inspe- Sampler s - 08:21. Was place Remove 4 Add casin Drive casi	aty meeting of the ction, no defitting on both the drunt of the ction	Samp  conduct ficiencie ttom. S . The sa n @ 08 f casing 86.46 ft ft bgs. 3	DESCR red (07:17) es noted. I et-up drives :55 hrs. g. Trip Dp. ) and Dp 5 86.46 – (3.	IPTION  Discussiff (alto be head as pulled (tip into 0) (total 35 + 1.2)	OF OPERATION Seed anticipated ernate) arrives 0 and hammer. Driftom the boring (boring (11:15), 87.12 ft). Set-to.	2000 2000 2000 2000 2000 2000 2000 200	K. Johnson (PIC) ?? (HPT) K. Flower  mplete equipment maintenance 083-13 (80.91 – 82.21) @ 08:20 the deck @ 08:46. The sample
Baromet mph 7 FROM 07:00 08:15	TIME TO 08:15	Daily safe and inspe- Sampler s - 08:21. was place Remove 4 Add casin Drive casidrive head	aty meeting of titing on book of the drug	Samp  conduct ficiencie ftom. S  The same @ 08 f casing 86.46 ft ft bgs. 3	DESCR red (07:17) es noted. Fet-up drive ampler was :55 hrs. g. Trip Dp. ) and Dp 5 86.46 – (3.	IPTION  Discuss HPT (altother head are spulled with pulled spulled spu	OF OPERATION Seed anticipated ernate) arrives 0 and hammer. Driftom the boring (11:15). 87.12 ft). Set-to. Blows (not response). Blows (not response). Set-to. Set-to.	2000 2000 2000 2000 2000 2000 2000 200	K. Johnson (PIC) ?? (HPT) K. Flower  mplete equipment maintenance 083-13 (80.91 – 82.21) @ 08:20 the deck @ 08:46. The sample re hammer and disassemble
Baromet mph 7 FROM 07:00 08:15	TIME TO 08:15	Daily safe and inspe- Sampler s - 08:21. Was place Remove 4 Add casin Drive casi drive head Add casin Drive casi	aty meeting of the ction, no defitting on both the drunt of the ction	Samp  conduct ficiencie ttom. S . The ss n @ 08 f casing 86.46 ft ft bgs. 9 90.46 ft ft bgs. 9	DESCR. red (07:17) res noted. If ret-up drives :55 hrs. red. Trip Dp. red. and Dp 5 86.46 – (3. red. and Dp 4 90.46 – (3.	IPTION  Discuss HPT (alto be head as a pulled so that as pulled so	OF OPERATION Seed anticipated ernate) arrives 0 and hammer. Driftom the boring (11:15). 87.12 ft). Blows (not respect to the property of the p	2000 2000 2000 2000 2000 2000 2000 200	K. Johnson (PIC) ?? (HPT) K. Flower  mplete equipment maintenance 083-13 (80.91 – 82.21) @ 08:2 the deck @ 08:46. The sample
Baromet mph 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	TIME TO 08:15 09:00 10:30	Daily safe and inspe- Sampler s - 08:21. was place Remove 4 Add casin Drive casi drive head Add casin Drive casi drive head	aty meeting of titing on book of the drug	Samp  conduct ficiencie ttom. S . The ss n @ 08 f casing 86.46 ft ft bgs. 9 90.46 ft ft bgs. 9	DESCR. red (07:17) res noted. If ret-up drives :55 hrs. red. Trip Dp. red. and Dp 5 86.46 – (3. red. and Dp 4 90.46 – (3.	IPTION  Discuss HPT (alto be head as a pulled so that as pulled so	OF OPERATION Seed anticipated ernate) arrives 0 and hammer. Driftom the boring (11:15). 87.12 ft). Blows (not respect to the property of the p	2000 2000 2000 2000 2000 2000 2000 200	K. Johnson (PIC) ?? (HPT) K. Flower  mplete equipment maintenance 083-13 (80.91 – 82.21) @ 08:2 the deck @ 08:46. The sample re hammer and disassemble
Baromet mph 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	TIME TO 08:15 09:00 10:30 11:45	Daily safe and inspe- Sampler s - 08:21. I was place Remove 4 Add casin Drive casi drive head Add casin Drive casi drive head	ety meeting of titing on book of the drun of the drun of the section of the se	Samp  conduct ficiencie ttom. S . The si m @ 08 f casing 86.46 ft ft bgs. 3 90.46 ft ft bgs. 4 10:30 h	DESCR eed (07:17) es noted. It et-up drives ampler was :55 hrs. g. Trip Dp. ) and Dp 5 86.46 – (3.	IPTION  Discuss HPT (altor head are spulled of total 35 + 1.2  O (total 35 + 1.0  -pull case	OF OPERATION Seed anticipated ernate) arrives 0 and hammer. Driftom the boring (11:15). 87.12 ft). Set-to). Blows (not respectively).	2000 2000 2000 2000 2000 2000 2000 200	K. Johnson (PIC) ?? (HPT) K. Flower  mplete equipment maintenance 083-13 (80.91 – 82.21) @ 08:2 the deck @ 08:46. The sample re hammer and disassemble
Baromet mph 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	TIME TO 08:15 09:00 10:30	Daily safe and inspe Sampler s - 08:21. I was place Remove 4 Add casin Drive casi drive head Add casin Drive casi drive head Lunch	ety meeting of ction, no defitting on book at the drum of the section of the sect	Samp  conduct ficiencie fi	DESCR red (07:17) es noted. It et-up drive ampler was :55 hrs. g. Trip Dp. ) and Dp 5 86.46 – (3. ) and Dp 4 90.46 – (3. rs.). Back- ve Dp from	IPTION  Discuss HPT (alternation of the control of	OF OPERATION Seed anticipated ernate) arrives 0 and hammer. Driftom the boring (11:15). 87.12 ft). Set-to). Blows (not respect to 191.12 ft). Set-to). Blows (not respect to 191.12 ft).	2000 2000 2000 2000 2000 2000 2000 200	K. Johnson (PIC) ?? (HPT) K. Flower  pplete equipment maintenance 083-13 (80.91 – 82.21) @ 08:2 the deck @ 08:46. The sample re hammer and disassemble re hammer and disassemble
Baromet mph 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	TIME TO 08:15 09:00 10:30 11:45	Daily safe and inspers - 08:21. I was place Remove 4 Add casin Drive casi drive head Add casin Drive casi drive head Lunch HPT arriv	ety meeting of ction, no defitting on both Blows 4/4/3 d in the drunder of the section of the se	Samp  conduct ficiencie ficiencie fitom. S  The si  m @ 08  f casing 86.46 ft ft bgs. 3  10:30 h  Remo g. Set-u	DESCR  red (07:17) es noted. F et-up drive ampler was :55 hrs. g. Trip Dp. ) and Dp 5 86.46 – (3. c) and Dp 4 90.46 – (3. rs.). Back ve Dp from up drive her	IPTION  Discuss HPT (altress badders as pulled of tip into a spulled of tip into a spull	OF OPERATION (Seed anticipated ernate) arrives 0 and hammer. Driftom the boring (11:15). 87.12 ft). Set-to). Blows (not refined as (12 ft).	2000 2000 2000 2000 2000 2000 2000 200	K. Johnson (PIC) ?? (HPT) K. Flower  mplete equipment maintenance 083-13 (80.91 – 82.21) @ 08:2 the deck @ 08:46. The sample re hammer and disassemble
Baromet mph  7 FROM 07:00 08:15 09:00 08:46 11:15 11:45 11:33	TIME TO 08:15 09:00 10:30 11:45 13:30	Daily safe and inspers — 08:21. I was place Remove 4 Add casin Drive casi drive head Add casin Drive casi drive head Lunch HPT arriv Trip samp 4/3/3. Th	ety meeting of ction, no defitting on both Blows 4/4/3 d in the drunder of the section of the se	Samp  conduct ficiencie ttom. S  The si  @ 08 f casing 86.46 ft ft bgs. 1  10:30 h  Remo g. Set-u as pulle	DESCR.  ded (07:17) es noted. Het-up drive ampler was :55 hrs. g. Trip Dp. ) and Dp 5 86.46 – (3. ) and Dp 4 90.46 – (3. rs.). Back- ve Dp from up drive head form the	IPTION  Discuss HPT (altress badders as pulled of tip into a spulled of tip into a spull	OF OPERATION (Seed anticipated ernate) arrives 0 and hammer. Driftom the boring (11:15). 87.12 ft). Set-to). Blows (not refined as (12 ft).	2000 2000 2000 2000 2000 2000 2000 200	K. Johnson (PIC) ?? (HPT) K. Flower  supplete equipment maintenance 183-13 (80.91 – 82.21) @ 08:2 the deck @ 08:46. The sample the deck and disassemble the hammer and disassemble the hammer and disassemble
Baromet mph 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	TIME TO 08:15 09:00 10:30 11:45 13:30 14:40	Daily safe and inspe- Sampler s - 08:21. I was place Remove 4 Add casin Drive casi drive head Add casin Drive casi drive head Lunch HPT arriv Trip samp 4/3/3. Th the drum Secure sit	ety meeting of ction, no defitting on both blows 4/4/3 d in the drunt of the section of the sect	Samp  conduct ficiencie ttom. S  The si  @ 08 f casing 86.46 ft ft bgs. 1  10:30 h  Remo g. Set-u as pulle	DESCR.  ded (07:17) es noted. Het-up drive ampler was :55 hrs. g. Trip Dp. ) and Dp 5 86.46 – (3. ) and Dp 4 90.46 – (3. rs.). Back- ve Dp from up drive head form the	IPTION  Discuss HPT (alternation of the control of	OF OPERATION (Seed anticipated ernate) arrives 0 and hammer. Driftom the boring (11:15). 87.12 ft). Set-to). Blows (not refined as (12 ft).	2000 2000 2000 2000 2000 2000 2000 200	K. Johnson (PIC) ?? (HPT) K. Flower  pplete equipment maintenance 083-13 (80.91 – 82.21) @ 08:2 the deck @ 08:46. The sample re hammer and disassemble re hammer and disassemble
Baromet mph 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	TIME TO 08:15 09:00 10:30 11:45 13:30 14:40 16:30	Daily safe and inspection of the sampler of the sam	ety meeting of ction, no defitting on both Blows 4/4/3 d in the drunt of fisection of g 5.0 (total ing to 81.91 d assembly. If assembly (g 4.0 (total ing to 86.11 d assembly (ess @ 12:45. essembler in boring to 86.11 d assembly (essembler in boring to 86.11 d assembler	Samp  conduct ficiencie ttom. S . The ss m @ 08 f casing 86.46 ft ft bgs. 9 10:30 h  Remo g. Set-u as pulle	DESCR.  led (07:17) les noted. If et-up drive ampler was :55 hrs. g. Trip Dp. 2) and Dp 5 86.46 – (3.  led (3.	IPTION  Discussifier (altochem as pulled separate of the control of total and an another control of total and	OF OPERATION Seed anticipated ernate) arrives 0 and hammer. Driftom the boring (11:15). 87.12 ft). Set-to). Blows (not rough 25 ft.  ammer. Drive and landed on the landed on the landed on the landed on the landed seed and landed seed seed and landed seed seed seed seed seed seed seed	2000 2000 2000 2000 2000 2000 2000 200	K. Johnson (PIC) ?? (HPT) K. Flower  supplete equipment maintenance 183-13 (80.91 – 82.21) @ 08:2 the deck @ 08:46. The sample the deck @ 08:46 are hammer and disassemble the hammer and disassemble  re hammer and disassemble

Durate	K	Duratek I	Federal Servi	ces, Inc., Northw	est Operations
C3830	SAMPL	E FORM		far No. <u>79</u>	Page 2 of 3
Sample No. 5020	083-13	Sample Tra	cking No. /2		
Target Depth	81	to	82,		
(1) <u>3.35</u> top of ri	g floor abov	ve ground			
(2) 4,55 casing s					
Csg Total (3) 85	46 - Stick	up (2) 4,55	= TD (4)		
Does not include of			80,91		1(5) ,25
Backpull stickup (		5			Rig Floor
Sample depth (4)	80,91	to (4+6)	82.21		101/55
		9			(2) 4,55 (1) 3,35
	Blov	v Count	1.3	Ground Lev	
	.5 ft	1 ft	1.5 ft		
Start Time	4	4	3		
End Time		+'-	+		
0822					
Estimated Passys	ry: 90%				
Estimated Recove	ry: 10/6	15			(3) 85.46
Remarks:					T I
(1) SAMPLE	in dru	n e 085	5 hrs.	(4) 80.91	
24					
1 = Top of rig floo	or above are	und		(7) 82,21	
2 = Stickup of csg			re from floor to		
top csg = SU					
3 = Total csg leng	th - Total Dont	t (TD)			
4 = Depth of csg = Total csg - SU	$J^{(2)} = TD$	л (1D)			(5) .25
5 = Casing back p	ull			1 1 . 4	
6 = Sampler drive		11-6		(6) 1,	3
7 = Total depth of	ariven sam	p1e = 4 + 6		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
PREPARED BY (Ple	ase print). 7	F. SKOGL	UF.	REVIEWED BY (Diagra	print): MG GARD NER
TITLE: FTZ	∩ . 4 c		28 02	TITLE: MER	DATE:
SIGNATURE:	Varid &	Moglie		SIGNATURE:	0 " 27.07
L		0		Mola	W-

Durate	<b>k</b> 1	Ouratek F	ederal Servi	ces, Inc., Northwe	est Operations
C3830	SAMPL	E FORM		FAR No. <u>79</u>	Page _ 3 of _ 3
Sample No. 50	2083-14	Sample Trac	king No. 13		
Target Depth	86	to 87	7		
(1) <u>3.35</u> top of r					
(2) <u>4.35</u> casing s					
Csg Total (3) 90.  Does not include		ıp (2) 4,35	= TD (4)		F=3(5), 25
Backpull stickup		5	TO SOMEONIA	7	Rig Floor
Sample depth (4)		to (4+6)	87.41		
		**		Ground Leve	(2) 4,35
		Count	1.3	T TOO CO	
Start Time	.5 ft	1 ft	1.5 ft		
Start Time	4	3	3		
End Time					
Estimated Recove					(3) 90.46
(1) SAMPI	e in an	m @ 14	iyo hus.	(4) 86.14	
¥					
1 = Top of rig floo 2 = Stickup of csg top csg = SU 3 = Total csg leng	g above groungth	nd 1 + measur	e from floor to	(7) 87.41	
4 = Depth of csg : Total csg - SU 5 = Casing back p 6 = Sampler drive	$J^{(2)} = TD$	n (TD)		(6)	(5), 25
7 = Total depth of		sle = 4 + 6		\	
PREPARED BY (Ple	ase print): $\delta$	E. SKOG	he 8/02_	REVIEWED BY (Please I	D.4.000
SIGNATURE:	U av vo	muzie		SIGNATURE: Mobal	2 11-27-02

DRIL	LING AND	SAMPL	ING (PE	RCUS	SSION) I	DAILY	WORK REC	CORD	Page 1 of 1
WELL I.D.: C3830 WELL NUI		WELL NUM	BER: N/A REPO		REPORT NUMBE	R: 80	DATE: August 29, 2002 Thursday		
CONTRA	ACT NUMBER:	8248-55		START CARD NO: S00631				RIG MODEL	NO: SIMCO 5000 (Rig 106)
PURPOSE: Daily and weekly safety meeting. Ca depth of 98.97 ft bgs.				asing is drove to a REFE Rev. 0		ERENCE: DFSNW-DOW-006,		LOCATION: TX Tank Farm, 20 West	
REFERE	NCE MEASUR	ING POINT	Steel Plate				TOTAL SHIFT	FOOTAGE: 11	.56 ft.
CONST	RUCTION DE	SCRIPTIO	N: N/A				BORING DE	PTH:	START TIME: 07:00
CASIN	DEPTH	TYPE CASING	DRIVE PO	ION	START DEPTH	END DEPTH	END. 90.3	1 ft 97 ft	END TIME: 16:30 CONTRACTOR TIME: 0.5 TOTAL TIME: 9.5
7.0 " OD	NA NA	CS	Shoe, 7.5 "	OD	86.11 ft	98.97 ft			
D	OCUMENTEL	DOWNTI	ME		CASING SUMMARY				PERSONNEL:
-	HPT - 4.5			Bottom of 7 " OD casing (start of shift) = 86.11 ft.				OPERATOR: K. Olson	
				Bottom of 7" OD casing (start of shift) = 98.97 ft				D Morris/D Curry	
WEATH	IER CONDITI	ONS (373-2	2716 or	Casing (7 in OD) stick up (end of shift) = 1.14 ft					WA LICENSE #: 1217
373-271							OTHER: DE Skoglie		
10:00: Temperature 74F, Humidity 51%,			SAMPLE SUMMARY				S. Snook/R. Sharp (Opr) K. Johnson (PIC)		
	tric pressure 2	9.25, Wind	1 N @ 6	N/A				K. Hartelius (HPT)	
mph									K. Flower
12	TIME				DESCR	IPTION	OF OPERATION	JS/RFMARKS	ñ
FROM	TO				1965				
07:00	07:45	maintenar	nce and insp	ection,	no deficien	cies note	d.	ed activities.	Complete equipment
07:45	08:50		ft section o						
08:50	08:58						96.13 ft). Set-u		and disassemble drive head
08:58	08:59	assembly.		n ogs.	91.40 - (3.	35 + 1.03	). Blows 20. Se	ecure nammer	and disassemble drive head
08:59	09:22			96.46 f	t) and Dp 5	.0 (total 9	97.13 ft). Set-up	hammer.	
09:22	09:30	Drive cas							cure hammer and disassemble
09:30	09:45						al 102.14 ft). Se		
	09:47			ft bgs.	101.46 – (3	.35 + 1.0	4). Blows 24/23	/25/26/21. Se	cure hammer and disassemble
09:45	0.5050000		d assembly.	102.46	0) - 10	204.11	104 14 0) . 0		
25/3/3/2		Add casir	ing to 08 07	ft bac	103.46 (2	2.0 (total	104.14 ft). Set-	up nammer.	ner and disassemble drive band
22/3/2/2	10:03	Drive casing to 98.97 ft bgs. 103.46 – (3.35 + 1.14). Blows 24/5. Secure ham						Secure nami	nei and disassemble drive nead
09:47	10:03		(10:15 hrs).	assembly (10:15 hrs). Break 10:15 – 10:30.					
09:47 10:03		assembly		ole (11	:20). Disas				
09:47 10:03 10:30 11:20	10:30	assembly Trip Dp o							
09:47 10:03 10:30 11:20 11:35	10:30 11:20 11:35 12:05	assembly Trip Dp o Secure sit Lunch	out of bore-h	e docur	nentation.				
09:47 10:03 10:30 11:20 11:35 12:05	10:30 11:20 11:35 12:05 16:30	assembly Trip Dp o Secure sit Lunch No alterna	out of bore-h	e docur	nentation.	cussion re	egarding comple	tion. Complet	e documentation.
09:47 10:03 10:30 11:20 11:35 12:05 REPOR	10:30 11:20 11:35 12:05 16:30 TBY: DE Sko	assembly Trip Dp of Secure sit Lunch No alterna	out of bore-h	e docur	nentation.	cussion re		tion. Complet	
	10:30 11:20 11:35 12:05 16:30 T BY: DE Sko	assembly Trip Dp o Secure sit Lunch No alterna	out of bore-h	pm. C	nentation.	cussion re	egarding comple	tion. Complet G Gardner	e documentation.  DATE: 10 - 98-02

	LING AND	SAMPL	ING (PE	RCU	SSION) D	AILY V	WORK REC	CORD	Page 1 of 3
WELL I.D.: C3830 WELL NUM			WELL NUM	BER: N/A REPORT NUMBER: 81			EPORT NUMBE	R: 81	DATE: September 03, 2002 Tuesday
CONTRA	CT NUMBER:	8248-55		STAR	START CARD NO: S00631 RIG MODEL			RIG MODEL	NO: SIMCO 5000 (Rig 106)
	E: Daily safety btain samples S				to a depth of 102.99 REFERENCE: DFSNW-DOW-006,		LOCATION: TX Tank Farm, 20 West		
REFERE	NCE MEASUR	ING POINT	Steel Plate	olus 0.2	5 ft (ground le	vel)	TOTAL SHIFT	FOOTAGE: 4.	02 ft
	RUCTION DE			J145 0.2	o it (Bround ie	.,,	BORING DE		START TIME: 07:00
CONSTR	SET-	SCRIFIIO	IV. IN/A				START: 98.		END TIME: 16:30
CASING	AT DEPTH	TYPE CASING	DRIVE PO DIMENS		START DEPTH	END DEPTH	END: 102.99 ft		CONTRACTOR TIME: 0.5 TOTAL TIME: 9.5
7.0 " OD	NA	CS	Shoe, 7.5 "	OD	98.97 ft	102.99 ft			
DC	CUMENTEL	DOWNTI	ME	Т	C		UMMARY		PERSONNEL:
	Wind 2			Botte	92607		start of shift) =	98.97 ft.	OPERATOR: K. Olson
	· · · · · ·				om of 7" OD		D Morris/D Curry		
WF 4TH	ER CONDITI	ONS (373-	2716 or		ng (7 in OD)		WA LICENSE #: 1217		
373-271		O/10 (3/3-2	2710 01		l casing	onest up		1.37 ft 107.46 ft	OTHER: DE Skoglie
						AMPLE S	SUMMARY		S. Snook (Opr)
07:04:	Temperature	62F, Humi	dity 47%,	Sam			7 – 100.36) 1.39	ft. 100%	R. Sharp (PIC)
	ric pressure 2	9.063, Wir	nd NW @				32 – 101.72) 1.		K. Hartelius (HPT)
11 mph,	gusts to 20			Juni	p. 0. 002000	10 (100.2	2 101.72) 1.	11. 100/0	K. Hartenus (HF 1)
7	TIME				DESCRI	PTION O	F OPERATIO	VS/RFMARKS	
FROM	ТО					Manager, and			
07:00	07:45				eting conduct no deficienc			ed activities.	Complete equipment
	00.44								
07:45	1 (1X:44	Tag hotto		ft bgs. Trip Dp/sampler into bore-hole.					
	08:44	Drive san	ple S02083	- 15 (#	14) (98.97 -			Blows 3/3/2.	Sample on deck @ 09:18 and
08:44	09:25	Drive san	nple S02083 () 09:25.	- 8				Blows 3/3/2.	Sample on deck @ 09:18 and
08:44 09:25	09:25 09:30	Drive san in drum ( Tag botto	nple S02083 ② 09:25. m @ 100.32	ft bgs		- 100.36)	08:44 – 08:45.	Blows 3/3/2.	Sample on deck @ 09:18 and
08:44 09:25 09:30	09:25 09:30 11:30	Drive san in drum ( Tag botto Shut dow	nple S02083 ② 09:25. m @ 100.32	ft bgs		- 100.36)	08:44 – 08:45.	Blows 3/3/2.	Sample on deck @ 09:18 and
08:44 09:25 09:30 11:00	09:25 09:30 11:30 11:30	Drive san in drum ( Tag botto Shut dow Lunch	nple S02083 2 09:25. m @ 100.32 n due to wir	ft bgs		- 100.36)	08:44 – 08:45.	Blows 3/3/2.	Sample on deck @ 09:18 and
08:44 09:25 09:30 11:00	09:25 09:30 11:30 11:30 12:13	Drive san in drum ( Tag botto Shut dow Lunch Trip in w	nple S02083 2 09:25. m @ 100.32 n due to wir ith sampler.	? ft bgs ad (18 r	nph with gus	- 100.36) sts to 26).	08:44 – 08:45.		
08:44 09:25 09:30 11:00 11:30	09:25 09:30 11:30 11:30	Drive san in drum (a Tag botto Shut dow Lunch Trip in wi Drive san	nple S02083 2) 09:25. m @ 100.32 n due to wir ith sampler. nple S02083	? ft bgs ad (18 r	nph with gus	- 100.36) sts to 26).	08:44 – 08:45.		Sample on deck @ 09:18 and deck @ 12:52 and in drum @
08:44 09:25 09:30 11:00 11:30	09:25 09:30 11:30 11:30 12:13	Drive san in drum (e Tag botto Shut dow Lunch Trip in w Drive san 13:00 hrs	nple S02083 2) 09:25. m @ 100.32 n due to wir ith sampler. nple S02083	? ft bgs ad (18 r	nph with gus	- 100.36) sts to 26).	08:44 – 08:45.		
08:44 09:25 09:30 11:00 11:30 12:13	09:25 09:30 11:30 11:30 12:13 13:15	Drive san in drum @ Tag botto Shut dow Lunch Trip in w Drive san 13:00 hrs Trip in D	nple S02083 2) 09:25. m @ 100.32 n due to wir ith sampler. nple S02083	2 ft bgs ad (18 r	mph with gus	sts to 26).	08:44 – 08:45. 2). Blows 2/2/	. Sample on	
08:44 09:25 09:30 11:00 11:30 12:13 13:15 14:02	09:25 09:30 11:30 11:30 12:13 13:15 14:02 14:07	Drive san in drum @ Tag botto Shut dow Lunch Trip in w Drive san 13:00 hrs Trip in D Add casir	nple S02083 2 09:25. m @ 100.32 n due to wir ith sampler. nple S02083 p. ng 4.0 (total	2 ft bgs ad (18 r	mph with gus 15) (100.32 ft) and Dp 4	sts to 26).	08:44 – 08:45. 2). Blows 2/2/	. Sample on -up hammer.	
08:44 09:25 09:30 11:00 11:30 12:13 13:15 14:02	09:25 09:30 11:30 11:30 12:13 13:15 14:02	Drive san in drum @ Tag botto Shut dow Lunch Trip in w Drive san 13:00 hrs Trip in D Add casir Drive cas drive head	nple S02083 2 09:25. m @ 100.32 n due to wir ith sampler. nple S02083 p. ng 4.0 (total ing to 102.9 d assembly.	2 ft bgs ad (18 r - 16 (# 107.46 9 ft bgs Backp	mph with gus 15) (100.32 ft) and Dp 4	sts to 26). 2 - 101.72 4.0 (total 3.35 + 1.1	08:44 – 08:45. 2). Blows 2/2/	. Sample on -up hammer.	deck @ 12:52 and in drum @
08:44 09:25 09:30 11:00 11:30 12:13 13:15 14:02	09:25 09:30 11:30 11:30 12:13 13:15 14:02 14:07 14:10	Drive san in drum (e Tag botto Shut dow Lunch Trip in wi Drive san 13:00 hrs Trip in D Add casir Drive cas drive head	nple S02083  09:25.  m @ 100.32  n due to win  ith sampler.  nple S02083  p.  ng 4.0 (total  ing to 102.9  d assembly.  but of boring	2 ft bgs ad (18 r - 16 (# 107.46 9 ft bgs Backp	15) (100.32 ft) and Dp 4 s. 107.46 – (3 oull casing 0.2	sts to 26). 2 - 101.72 4.0 (total 3.35 + 1.1 25 ft.	08:44 – 08:45. 2). Blows 2/2/	. Sample on -up hammer.	deck @ 12:52 and in drum @
08:44 09:25 09:30 11:00 11:30 12:13 13:15 14:02 14:07	09:25 09:30 11:30 11:30 12:13 13:15 14:02 14:07 14:10	Drive san in drum (e Tag botto Shut dow Lunch Trip in win 13:00 hrs Trip in Drive san Drive cas drive head Trip Dp o Run a san	mple S02083  0 09:25.  m @ 100.32  n due to win  ith sampler.  mple S02083  p.  ng 4.0 (total  ing to 102.9  d assembly.  but of boring  mpler into bo	2 ft bgs ad (18 r - 16 (# 107.46 9 ft bgs Backp	15) (100.32 ft) and Dp 4 s. 107.46 – (3 oull casing 0.2	sts to 26). 2 - 101.72 4.0 (total 3.35 + 1.1 25 ft.	08:44 – 08:45. 2). Blows 2/2/	. Sample on -up hammer.	deck @ 12:52 and in drum @
08:44 09:25 09:30 11:00 11:30 12:13 13:15 14:02 14:07	09:25 09:30 11:30 11:30 12:13 13:15 14:02 14:07 14:10	Drive san in drum (e Tag botto Shut dow Lunch Trip in win 13:00 hrs Trip in Drive san Drive cas drive head Trip Dp o Run a san	nple S02083  09:25.  m @ 100.32  n due to win  ith sampler.  nple S02083  p.  ng 4.0 (total  ing to 102.9  d assembly.  but of boring	2 ft bgs ad (18 r - 16 (# 107.46 9 ft bgs Backp	15) (100.32 ft) and Dp 4 s. 107.46 – (3 oull casing 0.2	sts to 26). 2 - 101.72 4.0 (total 3.35 + 1.1 25 ft.	08:44 – 08:45. 2). Blows 2/2/	. Sample on -up hammer.	deck @ 12:52 and in drum @
08:44 09:25 09:30 11:00 11:30 12:13 13:15 14:02 14:07	09:25 09:30 11:30 11:30 12:13 13:15 14:02 14:07 14:10	Drive san in drum (e Tag botto Shut dow Lunch Trip in win 13:00 hrs Trip in Drive san Drive cas drive head Trip Dp o Run a san	mple S02083  0 09:25.  m @ 100.32  n due to win  ith sampler.  mple S02083  p.  ng 4.0 (total  ing to 102.9  d assembly.  but of boring  mpler into bo	2 ft bgs ad (18 r - 16 (# 107.46 9 ft bgs Backp	15) (100.32 ft) and Dp 4 s. 107.46 – (3 oull casing 0.2	sts to 26). 2 - 101.72 4.0 (total 3.35 + 1.1 25 ft.	08:44 – 08:45. 2). Blows 2/2/	. Sample on -up hammer.	deck @ 12:52 and in drum @
07:45 08:44 09:25 09:30 11:00 11:30 12:13 13:15 14:02 14:07 14:10 15:30	09:25 09:30 11:30 11:30 12:13 13:15 14:02 14:07 14:10 15:30 16:30	Drive san in drum (e Tag botto Shut dow Lunch Trip in wi Drive san 13:00 hrs Trip in D Add casir Drive cas drive head Trip Dp c Run a san Secure sit	mple S02083  0 09:25.  m @ 100.32  n due to win  ith sampler.  mple S02083  p.  ng 4.0 (total  ing to 102.9  d assembly.  but of boring  mpler into bo	2 ft bgs ad (18 r - 16 (# 107.46 9 ft bgs Backp	15) (100.32 ft) and Dp 4 s. 107.46 – (3 oull casing 0.2	4.0 (total 3.35 + 1.1 25 ft.	2). Blows 2/2/ 108.14 ft). Set (2). Blows 9/1	u. Sample on up hammer.	deck @ 12:52 and in drum @
08:44 09:25 09:30 11:00 11:30 12:13 13:15 14:02 14:07 14:10 15:30	09:25 09:30 11:30 11:30 12:13 13:15 14:02 14:07 14:10	Drive san in drum @ Tag botto Shut dow Lunch Trip in w Drive san 13:00 hrs Trip in D Add casir Drive cas drive head Trip Dp o Run a san Secure sit	pple S02083 2 09:25. m @ 100.32 n due to win ith sampler. uple S02083 p. g. g. 4.0 (total ing to 102.9 d assembly. out of boring upler into be the complete to	2 ft bgs ad (18 r - 16 (# 107.46 9 ft bgs Backp	15) (100.32 ft) and Dp 4 s. 107.46 – (3 oull casing 0.2	- 100.36) sts to 26). 4- 101.72 4.0 (total 3.35 + 1.1 25 ft. m).	08:44 – 08:45. 2). Blows 2/2/	u. Sample on up hammer. 8/17/20. Secu	deck @ 12:52 and in drum @

Durate	<b>k</b>	Duratek Fe	deral Servio	es, Inc., Northw	est Operations
C3830	SAMPL	E FORM		FAR No. 81	Page 2 of 3
Sample No. 502	083-15	Sample Track	ing No. 14		
Target Depth	99		100		
(1) $3.35$ top of r	ig floor abov	e ground			
(2) 4.49 casing s		e ground			
Csg Total (3) 103	3,46 - Stick	ıp (2) 4,49	= TD (4)		
Does not include			48,47		(5) . 21
Backpull stickup	(2+5) , 25				Rig Floor
Sample depth (4)	98,97	to (4+6)	00.36		10449
					(2) 4, 49 (1) 3,35
	Blow	Count	1.39	Ground Le	
	.5 ft	1 ft	1.5 ft		
Start Time 0844	3	3	2_		
End Time 0845					
Estimated Recove	ry: 100%	6			(3) 103,46
	e in dre	in e 09;	25 hrs.	(4) 98,97	
1 = Top of rig flow 2 = Stickup of csg top csg = SU 3 = Total csg leng 4 = Depth of csg Total csg - SU 5 = Casing back p 6 = Sampler drive 7 = Total depth of	th = Total Dept J <sup>(2)</sup> = TD pull distance	nd 1 + measure	from floor to	(1) 100,36	(5),25
PREPARED BY (PICTITLE: FTL SIGNATURE: A	pase print):	D.E. SKOGL DATE: 09 C Koglie	ie 03 02	REVIEWED BY (Please TITLE: MR SIGNATURE: Mbba	DATE.

Durate	Duratek Federal Serv	ices, Inc., Northwe	est Operations
C3830	SAMPLE FORM	FAR No. <u>81</u>	Page <u>3</u> of <u>3</u>
	083- 16 Sample Tracking No. 15		
Target Depth	100 to 101		
	ig floor above ground		
(2) 4,49 casing s	stickup above ground		
	.46 - Stickup(2) 449 = TD(4)		
Does not include	. 27		F=3, (5), 2T
Backpull stickup (			Rig Floor
	100, 32 to (4+6) 101.72		
			(1) 3,35
	Blow Count (.3	Ground Lev	el
	.5 ft 1 ft 1.8 ft	1000	
Start Time			
1213	2 2 1		
End Time			
12.1			
Estimated Recove	ry: 100%		
D I			(3) 103.46
Remarks:	in drem @ 1300 hrs.	(4) 100.3Z	
(2) ATR 4	TAG 100,32 PT BGS,	(4) 700.	
(a) DIB 1	AG 10015- FI WS,		
1 = Top of rig floo		(1) 101.72	
	above ground 1 + measure from floor to		
top csg = SU 3 = Total csg leng	th		
4 = Depth of csg =	= Total Depth (TD)		
Total csg - SU	$J^{(2)} = TD$		(5),25
5 = Casing back p 6 = Sampler drive		(6)	211
	driven sample = 4 + 6	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<u>- 1</u>
•			•
			, x
PREPARED BY (Ple	ase print): D, E. SKOGLIE	REVIEWED BY (Please	print): MG GARDNER
TITLE: FTL	DATE: 09 03 0Z	TTTT T 110	DATE:
SIGNATURE:	Vand shogle	SIGNATURE: MCGan	2 10-08-02
DFSNW-WS-00	V		

DRIL	LING AND	SAMPL	ING (PE	RCU	SSION) I	AILY	WORK REC	CORD	Page 1 of 3	
WELL I.	D.: C3830		WELL NUM	BER:	N/A		REPORT NUMBE	CR: 82	DATE: September 04, 2002 Wednesday	
CONTR	ACT NUMBER:	8248-55		START CARD NO: S00631 RIG MODEL			RIG MODEL	/NO: SIMCO 5000 (Rig 106)		
	SE: Daily safety tain samples S0:						ERENCE: DFSNW-DOW-006,		LOCATION: TX Tank Farm, 20 West	
REFERE	ENCE MEASUR	ING POINT	Steel Plate				TOTAL SHIFT	FOOTAGE: 10	) 6 <del>0</del>	
	RUCTION DE						BORING DE		START TIME: 07:00	
DE CENTER	CET		1		1		START: 102	2.99 ft	END TIME: 16:30	
CASIN	AT DEPTH	TYPE CASING	DRIVE PO DIMENS	ION	START DEPTH	DEPTH	END: 113	.6 ft	CONTRACTOR TIME: 0.5 TOTAL TIME: 9.5	
7.0 " OE	) NA	CS	Shoe, 7.5 "	OD	102.99 ft	113.6 ft				
D	OCUMENTEL	DOWNTI	ME				SUMMARY		PERSONNEL:	
	N/A	a a atron man to the total file.	*	Bott	Bottom of 7 " OD casing (start of shift) = 102.99 ft.				OPERATOR: K. Olson	
				Bottom of 7" OD casing (start of shift) = 102.99 ft.					D Morris/D Curry	
WEATH	IER CONDITI	ONS (373-2	2716 or	Casing (7 in OD) stick up (end of shift) = 4.5 ft					WA LICENSE #: 1217	
373-271	10)			Total casing = 121.45 ft					OTHER: DE Skoglie	
				SAMPLE SUMMARY					S. Snook (Opr)	
	Temperature			Sample: S02083-17 (102.99 - 104.44) Rec ukn				R. Sharp (PIC)		
Barome	tric pressure 2	e 29.21, Wind @ 2 mph   Sample: S02083-18 () 100%				K. Hartelius (HPT)				
	TIME				D. 170.01	IDMI OLI	00 0000 (000			
FROM	TO				DESCR.	IPTION	OF OPERATIO	VS/REMARKS		
07:00	07:55		weekly safe					ed activities.	Complete equipment	
07:58	08:40	08:30 and	d in drum @	08:40					s 2/3/2. Sample on deck @	
08:40	09:33								ft). Set-up hammer.	
09:33	09:45	drive head	d assembly.				.22). Blows 7/1	5/17/20/22. S	Secure hammer and disassemb	
09:45	10:15		casing .25 f							
10:15	11:30		ip from borii	ng (10:	:55 hrs). Ru	ın sampl	er to bottom of b	oring.		
11:30	12:00	Lunch	mlo C02002	10 (4	17) 107 00	100 1	) (1.2.A) 12.20	12-20 DI	- 2/2/2 - 01	
12:00	14:19								s 2/2/2. Secure hammer and Γrip Dp/tip into boring.	
14:19	14:42						otal 118.15 ft).			
		Drive cas	ing to 113.0	ft bgs.	117.45 - (3	3.35 + 1.	1). Blows 12/30	/34/24/25. Sec	cure hammer and disassemble	
14:42	14:45	drive head	d assembly.	Blow	counts drop	ped.				
14:19	14:42						al 122.15 ft). Set			
14:42	14:45						5). Blows 36. S tly. A sample w		and disassemble drive head this depth.	
201377	15:40	Secure ha	mmer and d				tiate Dp trip out.			
-9-5-20		Secure sit	e.							
14:45	16:30									
14:45	16:30									
14:45 15:40	16:30 T BY: DE Sko	glie				RE	VIEWED BY: MO	G Gardner		
14:45 15:40 REPOR		ead	sko g	,		30.5343	VIEWED BY: MO		DATE: /0-9-02	

<b>Duratek</b>	Duratek Federal Servic	es, Inc., Northw	est Operations
C3830 SAMPL	E FORM	FAR No. 82	Page 2 of 3
Sample No. 502083 - 17	Sample Tracking No. 16		
Target Depth 103	to 104	1	
1) 3,35 top of rig floor abov			
2) 4,47 casing stickup above		1	
Csg Total (3) 107, 46 - Sticks	$\sup_{1} (2) \ 4,47 = TD (4) $	1	1
Does not include drive head	102,99		(5), 2s
Backpull stickup (2+5) , 25	1		Rig Floor
Sample depth (4) /02.99			
		1	(2) 4,47 (1) 3.35
Blow	Count 1,45	Ground Lev	
.5 ft	1 ft   1.8 ft		7 75050
Start Time	3 2		
0/38	5 2		
End Time 0759			
0131			
Estimated Recovery: 90%			
			(3) 107.46
Remarks: (1) Sample in drug	a agua hri	(4) 102.99	
(1) Sample in wood	ne by to may	(4) 702.	
1 = Top of rig floor above gro	and	(7) 104.44	
2 = Stickup of csg above group			
top csg = SU			
3 = Total csg length 4 = Depth of csg = Total Dept	1 (TD)		14
Total $csg - SU^{(2)} = TD$	(10)		75. (3)
5 = Casing back pull		-	<del></del>
6 = Sampler drive distance		(6) do	45
7 = Total depth of driven samp	$e^{1} = 4 + 6$	V 1	LJ
	c CVACLE		
	E. SKOGLIE		print): MG GARDNER
TITLE: FTL Dail & J	DATE: 09040Z	TITLE: MA	DATE:
SIGNATURE: Name of	wylle	SIGNATURE: Mile a	Qu 10.9.02

Duratek	Duratek Federal Servi	ces, Inc., Northwe	st Operations
C3830 S	AMPLE FORM	FAR No. 82	Page 3 of 3
	83-18 Sample Tracking No. 17		
Target Depth /	08 to 109		
(1) 3,35 top of rig:	floor above ground		
(2) <u>4,57</u> casing stic	kup above ground		
Csg Total (3) //2,4	6 - Stickup (2) 4,57 = TD (4)	1 1	
Does not include dri			(5).25
Backpull stickup (2+	55, (5		Rig Floor
Sample depth (4)	107,89 to (4+6) 109,19		(2) 4,57 (1) 2.35
	9		(1) 3,7
	Blow Count 1.3	Ground Level	
	.5 ft 1 ft 1.5 ft		
Start Time	2 2 2		
End Time			
1229			
Estimated Bassys	80%		
Estimated Recovery	4070		(3) (12.46
Remarks:		89	(v) 1. C
(1) Sample	in drum C 1311 hrs.	(4) 107. 89	
C Jp.c			
27			
1 = Top of rig floor	shove ground	109,19	
	ove ground 1 + measure from floor to		
top csg = SU			
3 = Total csg length 4 = Depth of csg = T	otal Depth (TD)		
Total csg - SU <sup>(2)</sup>	= TD		(5) .25
5 = Casing back pull		1 . 1 . 1 . 1 . 1 . 1 . 1 . 1 . 1 . 1	<del>\                                    </del>
6 = Sampler drive di 7 = Total depth of dr		(6) 1, 3	
, roun aopin of th	T. O. Dampie T. O		
	- A		
PREPARED BY (Please	print): D.E. SKOGLIE	REVIEWED BY (Please p.	rint): MG GARSNER
TITLE: FTL	-18 PATE: 109040Z	TITTE IN INC.	DATE:
SIGNATURE:	wa Moslie	SIGNATURE:	10-9-02
DFSNW-WS-00	V	7.00	

	LING AND	SAMPL	ING (PE	RCU	SSION) D	AILY	WORK REC	CORD	Page 1 of 2
WELL I.	D.: C3830		WELL NUM	BER:	N/A	A	REPORT NUMBE	CR: 83	DATE: September 05, 2002 Thursday
CONTRA	CT NUMBER:	8248-55		STAR	T CARD NO	: S00631		RIG MODEL	NO: SIMCO 5000 (Rig 106)
	SE: Daily safety tain samples S0		asing is drove	e to a de	epth 116.75 fi	REF.	ERENCE: DFSN 0	W-DOW-006,	LOCATION: TX Tank Farm, 20 West
REFERE	NCE MEASUR	ING POINT	Steel Plate				TOTAL SHIFT	FOOTAGE: 3.	85 ft
	RUCTION DE						BORING DE		START TIME: 07:00
CASIN SIZE	G SET-	TYPE CASING	DRIVE PO	SION DEPTH DEPTH E			START: 113		END TIME: 16:30 CONTRACTOR TIME: 0.5 TOTAL TIME: 9.5
7.0 " OD		CS	Shoe, 7.5 "	OD	113.6 ft	117.45			
	OCUMENTEL	DOWNTI	ME		(	ft	SUMMARY		PERSONNEL:
D	N/A	DUNNIII	HE.	Rott			start of shift) =	113.6.0	OPERATOR: K. Olson
	IN/A						(end of shift) =		D Morris/D Curry
WEATL	IED CONDITI	ONE (272	716	-			(end of shift) =		- COMMON AND AND AND AND AND AND AND AND AND AN
373-271	IER CONDITI	ONS (3/3-2	2/10 01		l casing =			4.011	WA LICENSE #: 1217
775-271	(0)			Tota			SUMMARY		OTHER: DE Skoglie
07.28.	Temperature	46F Humi	dity 55%.	C					R. Sharp (Opr)
				Sam	pie: 502083	-19 (113.	55 – 115.0)		K. Johnson (PIC)
	tric pressure 2			Sam	pie: 502083	-19 (113.	55 – 115.0)		K. Johnson (PIC) R. Ancelet (HPT)
Barome	tric pressure 2			Sam	pie: S02083	-19 (113.	55 – 115.0)		Maria - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
Barome	tric pressure 2			Samj			OF OPERATION	NS/REMARKS	R. Ancelet (HPT)
Barome FROM	TIME TO	9.21, Wind	1 @ 2 mph		DESCRI	IPTION (	OF OPERATION		R. Ancelet (HPT)
Barome FROM	tric pressure 2	9.21, Wind	1 @ 2 mph	conduc	DESCRI	IPTION (	OF OPERATION		R. Ancelet (HPT)
FROM 07:00	TIME TO	9.21, Wind	2 mph ety meeting on, no deficien	conduc	DESCRI	IPTION (	OF OPERATION	. Complete ec	R. Ancelet (HPT)
FROM 07:00	TIME TO 07:58	Daily safe inspection	2 mph ety meeting on, no deficien	conductions in the conduction of the conduction	DESCRI	IPTION (	OF OPERATION	. Complete ec	R. Ancelet (HPT)
FROM 07:00 07:58 09:02	TIME TO 07:58 09:02 09:12 10:00	Daily safe inspection Trip Dp/ti Set-up dri Drive sam	ety meeting on the following from boring the head and the ple S02083:	conductions in the conduction of the conduction	DESCRIPTION OF THE PROPERTY OF	Sed anticontom @	OF OPERATION ipated activities 113.55 ft bgs.	. Complete ec Run sampler to 09:13. Blows	R. Ancelet (HPT)
FROM 07:00 07:58 09:02 07:58 10:00	TIME TO 07:58 09:02 09:12 10:00 11:40	Daily safe inspection Trip Dp/ti Set-up dri Drive san disassemt Trip Dp in	ety meeting on the following from boring the head and the ple S02083:	conduction of the conduction o	DESCRIPTION OF THE PROPERTY OF	MPTION (1 sed anticontom @ - 115.0 (1 k @ 09:5	OF OPERATION in pated activities 113.55 ft bgs.  1.45 ft) 09:12 – 6 and in drum (	. Complete ec Run sampler to 09:13. Blows	R. Ancelet (HPT)  quipment maintenance and b bottom of boring.
Parome PROM PROM PROM PROM PROM PROM PROM PROM	TIME TO 07:58 09:02 09:12 10:00 11:40 12:15	Daily safe inspection Trip Dp/ti Set-up dri Drive san disassemt Trip Dp in Lunch	ety meeting on the property meeting of the promiser of the property of the pro	conductions in the conduction of the conduction	DESCRIPTION OF THE PROPERTY OF	sed anticottom @ - 115.0 (1 k @ 09:5	DF OPERATION in pated activities 113.55 ft bgs. 1.45 ft) 09:12 – 6 and in drum (equipment.	. Complete economic Run sampler to 09:13. Blows @ 10:00 hrs.	R. Ancelet (HPT)  quipment maintenance and b bottom of boring.
Barome	TIME TO 07:58 09:02 09:12 10:00 11:40	Daily safe inspection Trip Dp/ti Set-up dri Drive san disassemb Trip Dp in Lunch	ety meeting on the property of	conduction in the conduction i	DESCRIPTION OF THE PROPERTY OF	sed anticottom @ - 115.0 (1k @ 09:50). Fuel c	DF OPERATION in pated activities 113.55 ft bgs. 1.45 ft) 09:12 – 6 and in drum (equipment. 122.15 ft). Set	Run sampler to 09:13. Blows @ 10:00 hrs.	R. Ancelet (HPT)  quipment maintenance and b bottom of boring.  5/7/6. Secure hammer and
FROM 07:00 07:58 09:02 07:58 10:00 11:40	TIME TO 07:58 09:02 09:12 10:00 11:40 12:15	Daily safe inspection Trip Dp/ti Set-up dri Drive san disassemt Trip Dp in Lunch Add casin Drive cas: 116.0 = 7	ety meeting on an odeficient of the deficient of the defi	conductions in the conduction of the conduction	DESCRIA eted. Discus oted. g depth to b eer. 18) 113.55 - mple on dec 10:05 - 10:2 ft) and Dp s. 122.15 - ( e 40; and 11	### APTION Cosed anticostom @  - 115.0 (1 k @ 09:5 to Fuel cosed 4.0 (total 3.35 + 1.6.42 - 11	DF OPERATION ipated activities 113.55 ft bgs. 1.45 ft) 09:12 – 6 and in drum (equipment. 122.15 ft). Set 35). Blows 113 6.75 = 54; 116.	. Complete economic Run sampler to 09:13. Blows @ 10:00 hrs. e-up hammer. 8.6 – 114.0 = 175 – 117.45 re	R. Ancelet (HPT)  quipment maintenance and b bottom of boring.  5/7/6. Secure hammer and  3; 114.0 – 115.0 = 60; 115.0 –  efusal. Secure hammer and
FROM 07:00 07:58 09:02 07:58 10:00 11:40 12:15	TIME TO 07:58 09:02 09:12 10:00 11:40 12:15 12:30	Daily safe inspection Trip Dp/ti Set-up dri Drive san disassemt Trip Dp in Lunch Add casin Drive cas: 116.0 = 7 disassemt	ety meeting on an odeficient of the deficient of the defi	conductions in the conduction of the conduction	DESCRI sted. Discus oted. g depth to b ier. 18) 113.55 - mple on dec 10:05 - 10:2 ft) and Dp s. 122.15 - ( = 40; and 11 mbly. Bore-	### APTION Cosed anticontrol (a)   115.0 (1)   k (a) 09:5   20. Fuel (c)   4.0 (total 3.35 + 1.6.42 - 11   1.6.42	DF OPERATION ipated activities 113.55 ft bgs. 1.45 ft) 09:12 – 6 and in drum (equipment. 122.15 ft). Set 35). Blows 113	. Complete economic Run sampler to 09:13. Blows @ 10:00 hrs. e-up hammer. 8.6 – 114.0 = 175 – 117.45 re	R. Ancelet (HPT)  quipment maintenance and b bottom of boring.  5/7/6. Secure hammer and  3; 114.0 – 115.0 = 60; 115.0 –  efusal. Secure hammer and
FROM 07:00 07:58 09:02 07:58 10:00 11:40 12:15 12:30	TIME TO 07:58 09:02 09:12 10:00 11:40 12:15 12:30 12:47	Daily safe inspection Trip Dp/ti Set-up dri Drive san disassemt Trip Dp in Lunch Add casin Drive cas: 116.0 = 7 disassemt Disassemt	ety meeting on an odeficient of the drive head and pale S02083-ble drive head into boring. If a sing to 116.7:8; 116.0 – 1 ble drive head ble Dp comi	conductions in the second conduction of the se	DESCRI sted. Discus oted. g depth to b ier. 18) 113.55 - mple on dec 10:05 - 10:2 ft) and Dp s. 122.15 - ( = 40; and 11 mbly. Bore- of the borin	### APTION Cosed anticontrol (a)   115.0 (1)   k (a) 09:5   20. Fuel (c)   4.0 (total 3.35 + 1.6.42 - 11   1.6.42	DF OPERATION ipated activities 113.55 ft bgs. 1.45 ft) 09:12 – 6 and in drum (equipment. 122.15 ft). Set 35). Blows 113 6.75 = 54; 116.	. Complete economic Run sampler to 09:13. Blows @ 10:00 hrs. e-up hammer. 8.6 – 114.0 = 175 – 117.45 re	R. Ancelet (HPT)  quipment maintenance and b bottom of boring.  5/7/6. Secure hammer and  3; 114.0 – 115.0 = 60; 115.0 –  efusal. Secure hammer and
FROM 07:00 07:58 09:02 07:58 10:00 11:40 12:15 12:30	TIME TO 07:58 09:02 09:12 10:00 11:40 12:15 12:30 12:47	Daily safe inspection Trip Dp/ti Set-up dri Drive san disassemt Trip Dp in Lunch Add casin Drive cas: 116.0 = 7 disassemt Disassemt	ety meeting on an odeficient of the head and on the boring. It is a second of the head and the boring. It is a second of the head and the boring. It is a second of the head and the boring of the head and the boring. It is a second of the head and the head and the boring of the head and the	conductions in the second conduction of the se	DESCRI sted. Discus oted. g depth to b ier. 18) 113.55 - mple on dec 10:05 - 10:2 ft) and Dp s. 122.15 - ( = 40; and 11 mbly. Bore- of the borin	### APTION Cosed anticontrol (a)   115.0 (1)   k (a) 09:5   20. Fuel (c)   4.0 (total 3.35 + 1.6.42 - 11   1.6.42	DF OPERATION ipated activities 113.55 ft bgs. 1.45 ft) 09:12 – 6 and in drum (equipment. 122.15 ft). Set 35). Blows 113 6.75 = 54; 116.	. Complete economic Run sampler to 09:13. Blows @ 10:00 hrs. e-up hammer. 8.6 – 114.0 = 175 – 117.45 re	R. Ancelet (HPT)  quipment maintenance and b bottom of boring.  5/7/6. Secure hammer and  3; 114.0 – 115.0 = 60; 115.0 –  efusal. Secure hammer and
FROM 07:00 07:58 09:02 07:58 10:00 11:40 12:15 12:30 12:47	TIME TO 07:58 09:02 09:12 10:00 11:40 12:15 12:30 12:47	Daily safe inspection Trip Dp/ti Set-up dri Drive san disassemt Trip Dp in Lunch Add casin Drive cas: 116.0 = 7 disassemt Disassemt	ety meeting on an odeficient of the drive head and pale S02083-ble drive head into boring. If a sing to 116.7:8; 116.0 – 1 ble drive head ble Dp comi	conductions in the second conduction of the se	DESCRI sted. Discus oted. g depth to b ier. 18) 113.55 - mple on dec 10:05 - 10:2 ft) and Dp s. 122.15 - ( = 40; and 11 mbly. Bore- of the borin	### APTION Cosed anticontrol (a)   115.0 (1)   k (a) 09:5   20. Fuel (c)   4.0 (total 3.35 + 1.6.42 - 11   1.6.42	DF OPERATION ipated activities 113.55 ft bgs. 1.45 ft) 09:12 – 6 and in drum (equipment. 122.15 ft). Set 35). Blows 113 6.75 = 54; 116.	. Complete economic Run sampler to 09:13. Blows @ 10:00 hrs. e-up hammer. 8.6 – 114.0 = 175 – 117.45 re	R. Ancelet (HPT)  quipment maintenance and b bottom of boring.  5/7/6. Secure hammer and  3; 114.0 – 115.0 = 60; 115.0 –  efusal. Secure hammer and
FROM 07:00 07:58 09:02 07:58 10:00 11:40 12:15 12:30 12:47	TIME TO 07:58 09:02 09:12 10:00 11:40 12:15 12:30 12:47	Daily safe inspection Trip Dp/tt Set-up dri Drive san disassemt Trip Dp in Lunch Add casin Drive cas: 116.0 = 7 disassemt Disassemt Secure Sin	ety meeting on an odeficient of the drive head and pale S02083-ble drive head into boring. If a sing to 116.7:8; 116.0 – 1 ble drive head ble Dp comi	conductions in the second conduction of the se	DESCRI sted. Discus oted. g depth to b ier. 18) 113.55 - mple on dec 10:05 - 10:2 ft) and Dp s. 122.15 - ( = 40; and 11 mbly. Bore- of the borin	### APTION Consequence of the control of the contro	DF OPERATION ipated activities 113.55 ft bgs. 1.45 ft) 09:12 – 6 and in drum (equipment. 122.15 ft). Set 35). Blows 113 6.75 = 54; 116.	. Complete ed Run sampler to 09:13. Blows @ 10:00 hrs. up hammer. .6 - 114.0 = 1 75 - 117.45 re ppth of 117.45	R. Ancelet (HPT)  quipment maintenance and b bottom of boring.  5/7/6. Secure hammer and  3; 114.0 – 115.0 = 60; 115.0 –  aftisal. Secure hammer and

Durate	k i	Duratek F	ederal Servi	ces, In	c., Northw	vest Operations
C3830	SAMPL	E FORM		FAR N	o. <b>B</b> 3	Page 2 of 3
Sample No. 5 02	083-19	Sample Trac	king No. 17B			
	TBD	to	TBD			
(1) <u>3.35</u> top of ri	g floor abov	e ground				
(2) <u> </u>	tickup abov	e ground				
Csg Total (3) 121.	45 - Stick	up (2) 7.9	= TD (4)			
Does not include d			/13.55	4		(5) , 5
Backpull stickup (				_		Rig Floor
Sample depth (4)	(13,53	to (4+6)	115.0	4		10 79
		<b>4</b> 0				(2) 7.9 (1) 3.35
	Blow	Count	1.45		Ground Le	
	.5 ft	1 ft	1.5 ft			
Start Time	5	7	6			
End Time		<u> </u>	-			
0913						
Estimated Recover	ry: (00°	۵1_				
Estimated Recover	iy. (00	70				(3) 121.45
Remarks:			(	-	65	100,100
(1) Sample	in down	~ @ 10:0	oo hrs.	(	113.55	
144						
1 = Top of rig floo	r ahove gro	und			(7) ils.0	
2 = Stickup of csg			e from floor to		1	
top csg = SU	d.					
3 = Total csg lengt 4 = Depth of csg =		h (TD)				
Total csg - SU	$^{(2)} = TD$	(12)				(5) ,5
5 = Casing back p					. —	
6 = Sampler drive 7 = Total depth of		01e = 4 + 6			(6) 1.	42
			, ,			
PREPARED BY (Plea		.E. SKOg	lie	REVIE	WED BY (Please	print): Kent Repudols
TITLE: FTL	0-16	DATE: 09/0	5/02		Pris.m.	DATE:
SIGNATURE:	Vavia	· suco cuè	-	SIGNA	TURE: Kush	Lynn 11-20-02
DFSNW-WS-00						

	Dı	urate	k Fede	ral Se	rvices,	Inc., No	rthw	est Ope	rations		
		TUB	ULAR G	oods	DUAL ST	RING TA	LLY	SHEET	Pag	e <b>3</b>	of 3
DATE: O	3/20/02	w	ELL NUMI	BER: C 3	3830	CONTINU	JATION	OF REPORT	NUMBER	: 8	3
	CASINO	3		INNER	STRING		CA	SING		INN	ER STRING
JT. NO.	LENGTH (in	n feet)	JT. NO.	LENGT.	H (in feet)	JT. NO.	LENG	TH (in feet)	JT. NO.	LENC	GTH (in feet)
1A	1.45 (5)	40E)	1B	0.85	(TIP)	19A	50	65.45	19B	5.0	71,"
2A )	1.99		2B	4.99	(e)	20A	5.0	70,45	20B	2.0	73.11
3A (	2.0 5	,44	3B	5,25	11.06	21A *	2.0	72.45	21B *	4.0	77."
· 4A	5.0 10	0.44	4B	5.0	16.06	· ; 22A *	4.0	76,45.	- 22B	5.01	82.12
5A OFF	5.0 15	5.44	5B	4.0	20.06	23A DFF	5.01	81.46	OFF 7 4	4.0	86.12
6A		9.44	6B	5.0	21.06	24A	4.0	85.46	24B (	5.0	87.12
- 7A	5.° 2	0,44	· · 7B ∫	5.01	26.07	25A	5.0	86.46	25B	4.0	91.12
8A	1	5.44	8B (	5.0	31.07	26A	4.0	90.46	26B	5.01	92.13
9A	5.0 3	30.44	OFF 9B	2.0	33.07	27A	5.0	91.46	27B	5.0	97.13
off 10A	2.0	32.44	10B	5.01	36.08	28A	5.0	96.46	28B	5,01	102.14
11A	5.01 3	5.45	11B	5.0	41.08	29A	5.0	101,46	29B	2.0	104,14
12A	50 .	40.45	12B	5.01	46.09	30A ¥	2.0	103.46	30B	4.0	108.14
13A	5.0 L	15.45	13B	5.0	51.09	31A ¥	4.0	107.46	·31B	5.0	113.14
14A	5.0	50.45	14B	5.01	56.10	32A	5.0	112.46	32B	5.01	118.15
15A	5.0 5	55.45	off 15B	2.0	58.10	33A	4,99	117,45	33B	40.	122.15
OFF 16A	2.0	57.45	OFE	4.0	62.10	34A	4.0	121.45	34B	-00 200	1.6
9FF 17A	4.0	61.45	17B	5.0	61.10	35A			35B		
18A	5.0	60,45	18B )	5.01	66.11	36A			36B		
ТОТ	'AL for Page:		61	.,	FT	TOTAL fo	r Page:				FT
	AL for Page:			, th	ET	TOTAL fo					FT
тот	AL (ALL):			— 4/A	FT	TOTAL (A	LL):				FT
REPORT	BY: DE Skogl	lie				REVIEWE	D BY:	MG Gardner	KDRe	y notes	,
1	ield Team Lead	d I	DATE: ,6	2/05/0	ا کے ا	TITLE: P	+10			11-20	
SIGNATU	jre: <i>\</i>	avio	(E. Slee	ghe		SIGNATU	RE:	Stud	gh)		
DRTK-WS-003				J .							

\* CASING WAS LEFT IN STRING

NOTE 1: SAMPLEY + STINGER = 5.67 FT. NOTE 2: DRIVE HEAD = 3.2 FT.

		DI MINITE L				7 111		VORK REC	S DOMESTIC	Page 1 of 1		
WELL I.D.	: C3830		WELL NUM	BER:	N/A		R	EPORT NUMBE	'R: 84	DATE: September 06, 2002 Friday		
CONTRAC	T NUMBER:	8248-55		STAR	RT CARD NO	: S0063	30		RIG MODEL/	NO: SIMCO 5000 (Rig 106)		
PURPOSE survey and		meeting. G	yroscope surv	ey and	equipment		EFE ev. (	RENCE: DFSN'	W-DOW-006,	6, LOCATION: TX Tank Farm, 20 West		
REFEREN	CE MEASUR	ING POINT:	Steel Plate					TOTAL SHIFT	FOOTAGE: 0.	Y-101		
CONSTR	UCTION DE	SCRIPTIO	N: N/A					BORING DE		START TIME: 0700		
CASING SIZE	SET- AT DEPTH	DRIVE PO DIMENS	7,777,000	START DEPTH	ENI DEP	200	START: 117. END: 117.	.45 ft 45 ft	END TIME: 1530 CONTRACTOR TIME: 0.5 TOTAL TIME: 8.5			
7.0 " OD	NA	CS	Shoe, 7.5 "	OD	117.45 ft	117.4 ft.	15					
DO	CUMENTEL	DOWNTI	ME				G SU	JMMARY		PERSONNEL:		
				Botte	om of 7 " Ol	) casir	ng (s	tart of shift)	= 117.45 ft.	OPERATOR: KC Olson		
	N/A				om of 7" OI				= 117.45 ft.	DL Curry/DE Morris		
						) stick	up (	(end of shift) =	= 4.0 ft.	WA LICENSE #: 1217		
WEATHE	R CONDITI	ONS (373-2	2716)	Tota	l Casing =				= 121.45 ft.	OTHER: D Skoglie		
	N/A					AMPL	LE S	UMMARY		K Johnson (Optr/PIC)		
	14/74						N/A			K Hartelius (HPT)		
							. 1/21			K. Flower/R. Sharpe K. Young/F. Hall		
TI	ME				DESCR	IDTIO	N O	F OPERATION	IC/DEMADES			
FROM	TO				DESCR	PHO	N O	FOPERATION	VS/KEMAKKS			
07:00	07:45	Conduct	daily safety i	neeting	g.							
07:45		A gyrosco	pe survey w	as con	npleted.							
		Equipment washed.	nt was surve	yed and	d released (t	he dril	ll pi	pe was transpor	rted to the Dur	atek pipe yard and pressure		
	15:30	Documen	tation was c	omplet	ed. Area se	cured.						
REPORT	BY: DE Sko					R	EVI	EWED BY: KD	Reynolds	HOURS)		
TITLE: F	ield Team L	eard _	l E. Sku	,		T	ITL	E: Project Man	nager	DATE: 11-20-02		
	JRE: A	1/0.00	1 . 14	/	East 6	0	ICN	ATURE:	1/1	4		

DRILL	ING AND	SAMPL	ING (PE	RCUS	SSION) D	AIL	Y V	VORK REC	CORD	Page 1 of 1	
WELL I.D	.: C3830		WELL NUM	BER:	N/A		RI	EPORT NUMBE	R: 85	DATE: September 09, 2002 Monday	
CONTRA	CT NUMBER:	8248-55		STAR	RT CARD NO	: S0063	30		RIG MODEL/	NO: SIMCO 5000 (Rig 106)	
	E: Daily Safety nd equipment:			gging o	f borehole w	100	EFE ev. (	RENCE: DFSN'	W-DOW-006,	LOCATION: TX Tank Farm, 200 West	
REFEREN	ICE MEASUR	ING POINT:	Steel Plate					TOTAL SHIFT	FOOTAGE: 0.	0 ft.	
CONSTR	UCTION DE	SCRIPTIO	N: N/A		BORING DEPTH:					START TIME: 0700	
CASING SIZE	SET- AT DEPTH	TYPE CASING	DRIVE PO		START DEPTH	ENI DEP		START: 117. END: 117.		END TIME: 1630 CONTRACTOR TIME: 0.5 TOTAL TIME: 9.5	
7.0 " OD	NA	CS	Shoe, 7.5 "	OD	117.45 ft	117.4 ft.	5				
DO	CUMENTEL	DOWNTI	ME		-		3 SU	<i>IMMARY</i>		PERSONNEL:	
				Botto	om of 7 " Ol	D casir	ng (s	tart of shift)	= 117.45 ft.	OPERATOR: KC Olson	
	N/A				om of 7" OI				= 117.45 ft.	DL Curry/DE Morris	
				Casi	ng (7 in OD	) stick	up (	end of shift) =	= 4.0 ft.	WA LICENSE #: 1217	
WEATHE	ER CONDITI	ONS (373-2	2716)	Tota	l Casing =				= 121.45 ft.	OTHER: D Skoglie	
	N/A					SAMPL	E S	UMMARY		K Johnson (Optr/PIC)	
	N/A						N/A			K Hartelius (HPT)	
							N/A			K. Flower/R. Sharpe K. Young/F. Hall	
T	IME									K. Foung/F. rian	
FROM	TO	-			DESCR.	IPTIO.	NO.	F OPERATION	VS/REMARKS		
07:00	07:35	Conduct	daily safety	meetin	o .						
07:35	07.55					loistur	e lo	gging was com	mleted and ger	manium logging initiated (10	
		ft).						voii			
		Equipmen	nt was surve	yed and	d released.	Prepar	e fo	r moisture sens	or installation	•	
	16:30	Documen	tation was c	omplet	ed. Area se	cured.					
				-							
REPORT	BY: DE Sko	glie				R	EVI	EWED BY: KD	Reynolds		
				12				E: Project Ma	•	DATE: 11-20-02	
		111	E. Sho	1 -				ATURE:	12	0	

DRILLI	NG AND	SAMPL	ING (PE	RCUS	SION) D	AILY	Y V	ORK REC	ORD	Page 1 of 1	
WELL I.D.:	C3830		WELL NUM	BER: N	N/A		R	EPORT NUMBE	R: 86	DATE: September 10, 2002 Tuesday	
CONTRAC	T NUMBER:	8248-55		STAR	T CARD NO	S0063	0		RIG MODEL/	NO: SIMCO 5000 (Rig 106)	
	Daily Safety d equipment :		eophysical lo elease.	gging of	borehole wa	120	EFE ev. (	RENCE: DFSN	W-DOW-006,	LOCATION: TX Tank Farm, 200 West	
REFEREN	CE MEASUR	ING POINT:	Steel Plate					TOTAL SHIFT	TOTAL SHIFT FOOTAGE: 0.0 ft.		
CONSTRU	ICTION DE		Be			BORING DE		START TIME: 0700			
CASING SIZE	SET- AT DEPTH	TYPE CASING	DRIVE PO		START DEPTH	ENI DEPT		START: 117. END: 117.	45 ft 45 ft	END TIME: 1630 CONTRACTOR TIME: 0.5 TOTAL TIME: 9.5	
7.0 " OD	NA	CS	Shoe, 7.5 "	OD	117.45 ft	117.4 ft.	5				
Hea WEATHEI	Ith Physics - R CONDITI N/A	1.5 hrs.		Botto	om of 7 " OL om of 7" OL og (7 in OD) Casing =	casin casin stick	g (s g (e up	nd of shift) = end of shift) =	= 117.45 ft. = 117.45 ft. = 4.0 ft. = 121.45 ft.	PERSONNEL: OPERATOR: KC Olson DL Curry/DE Morris WA LICENSE #: 1217 OTHER: D Skoglie K Johnson (Optr/PIC) K Hartelius (HPT) K. Flower/R. Sharpe K. Young/F. Hall	
	ME				DESCRI	PTIO	V O	F OPERATION	VS/REMARKS		
FROM 07:00	TO 07:35	Conduct	daily safety i	neetina							
07:35	07.55					erman	inm	logging condu	icted to 52.0 fi		
57.00								r moisture sens			
	16:30		tation was c				0 10	moistare sens	or mstanation	*	
REPORT I TITLE: F SIGNATU	PORT BY: DE Skoglie LE: Field Team Lead NATURE: David E. Skoglie						ITL	EWED BY: KD E: Project Ma ATURE:		DATE: 11-20-02	

CONTRAC			WELL NUM	BER:	N/A REPORT NUMBER: 87					DATE: September 11, 2002	
CONTRAC									201.200	Wednesday	
	T NUMBER:				RT CARD NO					NO: SIMCO 5000 (Rig 106)	
	: Daily Safety survey and re		eophysical lo	gging o	f borehole an		EFE ev. (	RENCE: DFSN' )	W-DOW-006,	LOCATION: TX Tank Farm, 20 West	
REFEREN	CE MEASUR	ING POINT:	Steel Plate		TOTAL SHIFT FOOTAG					0 ft.	
CONSTR	JCTION DE	SCRIPTIO	N: N/A							START TIME: 0700 END TIME: 1630	
CASING SIZE	SET- AT DEPTH	TYPE CASING	DRIVE PO		START DEPTH	ENI DEP		START: 117. END: 117.		CONTRACTOR TIME: 0.5 TOTAL TIME: 9.5	
7.0 " OD	NA	CS	Shoe, 7.5 "	OD	117.45 ft	117.4 ft.	5				
DO	CUMENTEL	DOWNTI	ME		- 0		3 SU	MMARY		PERSONNEL:	
				Botto	om of 7 " Ol	D casin	ıg (s	tart of shift) =	= 117.45 ft.	OPERATOR: KC Olson	
Log	ging tool - :	3 hrs.		Botto	om of 7" OI	) casin	g (e	nd of shift) =	= 117.45 ft.	DL Curry/DE Morris	
						) stick	up (	end of shift) =		WA LICENSE #: 1217	
WEATHE	R CONDITI	ONS (373-2	2716)	Tota	l Casing =				= 121.45 ft.	OTHER: D Skoglie	
Camparat	ıre – 76 F; V	Vind N G	5 mmh.			SAMPL	E S	UMMARY		K Johnson (Optr/PIC)	
	c pressure –						N/A			K Hartelius (HPT)	
28%.						1	N/A			K. Flower/R. Sharpe K. Young/F. Hall	
TI	ME				STATE OF THE PARTY	1000-100 (1000)		No Photography of the Control of the Control	Tuesta (Vivesta Control Control	K. Toung/T. Hall	
FROM	TO				DESCR.	IPTIO	V O	F OPERATION	VS/REMARKS		
07:00	07:30	Conduct of	laily safety	meeting	g.						
07:30						down.	Init	iated cool-dow	m @ 10:30 too	ol is cooled-down. Geophysica	
		logging v	vas conducto	ed. Ge	rmanium lo	gging	cond	lucted.	- 0		
	15:00	Equipmen	nt was surve	yed and	d released.	Prepar	e fo	r moisture sens	or installation		
15:00	16:30	Documen	tation was c	omplet	ed. Area se	cured.					
DEDODT	BY: DE Sko	alia .				n	EV	EWED DV. VD	Dormalda		
CEFURI	ield Team L JRE:	gne	32 Per 2022			122.91		EWED BY: KD		DATE II as 43	
IIILE: I	ieid Team L	100	18.16					E: Project Man ATURE:		DATE: 11-20-02	

WELL I.D			WELL NUM				T	VORK REC		Page 1 of 1  DATE: September 12, 2002
WELL I.D	03630		WELL NOW	BEK.	IN/A		I AZ	SFORT NUMBE	Λ. 00	Thursday
	CT NUMBER:				RT CARD NO	: S0063	30		RIG MODEL/	NO: SIMCO 5000 (Rig 106)
PURPOSE	: Daily Safety	meeting. G	eophysical lo	gging c	ompleted.		ev. 0	RENCE: DFSN	W-DOW-006,	LOCATION: TX Tank Farm, 20 West
REFEREN	CE MEASUR	ING POINT:	Steel Plate			7 7 7		TOTAL SHIFT	FOOTAGE: 0.	0 ft.
CONSTR	UCTION DE	SCRIPTIO	N: N/A					BORING DE		START TIME: 0700
CASING SIZE	SET- AT DEPTH	TYPE CASING	DRIVE PO		START DEPTH	ENI DEP	5.5	START: 117. END: 117.		END TIME: 1630 CONTRACTOR TIME: 0.5 TOTAL TIME: 9.5
7.0 " OD	NA	CS	Shoe, 7.5 "	OD	117.45 ft	117.4 ft.	15			
DO	CUMENTEL	DOWNTI	ME		C		3 SU	MMARY		PERSONNEL:
				Botto	om of 7 " OI	) casin	ng (s	tart of shift) =	= 117.45 ft.	OPERATOR: KC Olson
He	alth physics -	- 1.5 hrs.		Botto	om of 7" OI	) casin	ıg (e	nd of shift) =	= 117.45 ft.	DL Curry/DE Morris
WEATHE	R CONDITI	ONS (373-2	2716)	Casin	ng (7 in OD	) stick	up (	end of shift) =	= 4.0 ft.	WA LICENSE #: 1217
				Tota	l Casing =				= 121.45 ft.	OTHER: D Skoglie
	N/A			_	S	<i>AMPL</i>	ES	UMMARY		K Johnson (Optr/PIC)
						-	N/A			K Hartelius (HPT)
							IN/AL			K. Flower/R. Sharpe K. Young/F. Hall
T	ME				D FOOD	rpmro:			10/2 21 / 12 / 2	A. Toung T. Hun
FROM	ТО				DESCR	IPTIO!	N O	F OPERATIO	VS/REMARKS	
07:00	07:30	Conduct	daily safety	meeting	g.					
07:30	14:00				_	erman	ium	logging condu	icted to final d	epth.
14:00	15:00	Equipmen	nt was surve	yed and	d released.	Prepar	e for	r moisture sens	or installation	. Install hydraulic hose on dril operations cannot be started.
15:00	16:30		tation was c		-		100000		1 0	
										117
DEDORT	DV DE CI	1:					CI/	EWED DV V	n 11	
	BY: DE Sko	_	76					EWED BY: KI		
	ield Team L	each) -	1º Sho	1				E: Project Ma ATURE:	nager	DATE: 1120-02
SIGNAT										

DRILL	ING AND	SAMPL	ING (PE	RCU	SSION) D	AILY	WORK RE	CORD	Page 1 of 1
WELL I.D.	: C3830		WELL NUM	MBER:	N/A		REPORT NUMB	ER: 89	DATE: September 16, 2002 Monday
CONTRAC	CT NUMBER:	8248-55		STAI	RT CARD NO:	S00630	)	RIG MODEL	/NO: SIMCO 5000 (Rig 106)
PURPOSE test.	: Daily Safety	meeting. B	orehole deco	mmissio	oning and perk	RE.	FERENCE: DFS	NW-DOW-006,	LOCATION: TX Tank Farm, 20 West
REFEREN	CE MEASUR	ING POINT	Steel Plate			-	TOTAL SHIP	T FOOTAGE: 1	6.26 ft. (decommissioning)
CONSTR	UCTION DE	SCRIPTIO	N: N/A				BORING D		START TIME: 0700
CASING SIZE	SET- AT DEPTH	TYPE CASING	DRIVE P					END TIME: 1630 CONTRACTOR TIME: 0.5 TOTAL TIME: 9.5	
7.0 " OD	NA	CS	Shoe, 7.5 "	OD	117.45 ft	96.11 ft.			
DO	CUMENTED	DOWNTI	ME		C		SUMMARY		PERSONNEL:
				Bott	om of 7 " OD	casing	(start of shift)	= 117.45 ft.	OPERATOR: KC Olson
Hea	alth physics -	- 1.0 hrs.					(end of shift)		DL Curry/DE Morris
<b>VEATHE</b>	R CONDITION	ONS (373-2	2716)	Casi	ng (7 in OD)	stick u	p (end of shift)	= 5.35 ft.	WA LICENSE #: 1217
				Tota	l Casing (end	d of shi	ft)	= 101.46 ft.	OTHER: D Skoglie
200 P. 200 C. 10 P. 100 C. 100 C. 100	ture – 64F; \				S.	AMPLE	E SUMMARY		K Johnson (Optr/PIC)
	c pressure 2	9.15; Hum	iidity –						K Hartelius (HPT)
52%.						N.	/A		K. Flower/R. Sharpe
									K. Young/F. Hall
TI	ME				DESCRI	DTION	OF OPERATIO	ONC/DEMARKS	
FROM	TO				DESCRI	FIION	OF OFEKATIO	NS/KEWAKKS	
7:00	09:00	Conduct dai boring. 08:	ily safety meet 35 the Work Pa	ng. Con ickage is	nplete equipmen on location.	nt inspect	ion with no deficier	cies. A discussion	was held regarding completion of the
9:00							(inside TX Tank F		
	11:00	Add benton	ite (4. sks) thro umbles (1 sk)	ugh casi	ng to 108.94 ft b	ogs (113.)	2 - [3.35 + 0.91]).	Back-pull casing 5.	ft bgs (122.3 – (3.35 + 2.0) 10:50 hrs. 0 ft. Casing @ 103.2 ft bgs. Add casing shoe (110.0 – [3.35 + 3.2]
1:00	11:05	Add 2 gallo	n water to hyd	ate bente	onite. Add sand	(10 – 30	) 2.6 gallons. Tag	112.4 - (3.35 + 3.1	5) = 105.9 ft bgs.
1:05		Lunch (11:0	05 – 11:35) Hy	drate ber	ntonite.				
	12:29				-		gallons water and m		
2:29	14:08	Time 12:29	Tape Measurer 110.04	nent	BGS Measure 103.54	ment	Time 12:30	Tape Measurement 110.05	nt BGS Measurement 103.55
		12:31	110.05		103.55		12:32	110.05	103.55
		12:33	110.06		103.56		12:34	110.06	103.56
		12:35 12:37	110.06 110.06		103.56 103.56		12:36 12:38	110.06 110.06	103.56 103.56
		12:43	110.06		103.56		12:48	110.06	103.56
		12:53	110.06		103.56		12:58	110.06	103.56
		13:03	110.07		103.57		13:08	110.07	103.57
		13:13 13:23	110.08 110.10		103.58 103.60		13:18 13:28	110.08 110.11	103.58 103.61
		13:38	110.13		103.63		13:48	110.15	103.65
		13:58	110.18	1 10 11	103.68		14:08	110.20	103.70
4:08		casing (2 ft)	. Casing @ 96	.11 ft BC	GS (101.46 - [3.	35 + 2.0	ck-pull casing (4 ft). j). Tag 109.13 – (3. = 101.19 ft BGS.		1,300 psig. Add 1 sk crumbles. Pull 7 ft BGS.
	16:30						mentation and discu	ss upcoming operat	tions.
					,пр		VIEWED BY: K		
FPODT						I KE.	VIEWELD BY K	LI KEVHOIDS	
				Λ					D. mm 11
TITLE: F			E 11	1.		TIT	ΓLE: Project M		DATE: 11-10-02
REPORT FITLE: F SIGNATU			. The	lii		TIT			DATE: 11-10-02

DRILL	ING AND	SAMPL	ING (PE	RCUS	SSION) I	AILY	WORK REC	CORD	Page 1 of 1
WELL I.D	D.: C3830		WELL NUM	MBER:	N/A	I	REPORT NUMBE	ER: 90	DATE: September 17, 2002 Tuesday
CONTRA	CT NUMBER:	8248-55		STAR	RT CARD NO	9: S00630		RIG MODEL	/NO: SIMCO 5000 (Rig 106)
	E: Daily Safety ensiometer ins		orehole deco	mmissio	oning and	REF.	ERENCE: DFSN		LOCATION: TX Tank Farm, 200 West
REFERE	VCE MEASUR	ING POINT:	Steel Plate				TOTAL SHIFT	FOOTAGE: 3	9.54 ft. (decommissioning)
	UCTION DE						BORING DE		START TIME: 0700
CASING	SET- AT	TYPE CASING	DRIVE P			END DEPTH	START: 101		END TIME: 1630 CONTRACTOR TIME: 0.5
7.0 " OD	DEPTH NA	CS	Shoe, 7.5 "		96.11 ft	59.9 ft.	END: 61.6	55 ft	TOTAL TIME: 9.5
						LINE STREET STREET			
DO	CUMENTEL	DOWNTI.	ME				UMMARY		PERSONNEL:
	***							= 96.11 ft.	OPERATOR: KC Olson
we wen	Minim							= 59.90 ft.	DL Curry/DE Morris
WEATHI	ER CONDITI	ONS (3/3-2	2/16)		l Casing (en	-	(end of shift)	= 2.2 ft. = 65.45 ft.	WA LICENSE #: 1217
Tempera	ture 57F; Wi	ind SW 5 –9	9;	1014			SUMMARY	- 03.43 It.	OTHER: D Skoglie
Humidity						MINII DE	00111111111		K Johnson (Optr/PIC) K Hartelius (HPT)
						N/A	۸.		K. Flower/R. Sharpe
									K. Young/F. Hall
7	IME				D FOOD	IDMION.			
FROM	TO				DESCR	IPTION	OF OPERATIO	NS/REMARKS	
07:00	09:30	Initial star with no d	rt-up delay, eficiencies.	the PIC A disc	is in traini ussion was	ng. Cond	uct daily safety	meeting. Con	mplete equipment inspection
09:30	09:52	Initial tag	revealed a	depth o	f 101.19 ft 1	BGS. Ne	w S.U. on tremi	ie (PVC) 101.2	2 ft BGS. Add sand 1 sk, a ottom of boring to landing plate.
09:52	10:24					-			he tensiometer is ran to bottom
10:24	10:53	Sand (5 g	allon) and w	ater (5	gallon) was	s tremmie	d through the c	asing shoe. A	tag revealed a depth to bottom $3S (102.7 - [3.35 + 2.75])$ .
10:53	11:30	The booking of the	a la				sing pulling @		20 (102.) [2.00 / 2.10]).
11:30	12:40						BBQ for crew.		rs were superb
12:40	13:42	Move the	pulley to th	e rotary	head saver	sub (alig	nment is better	). A tag revea	led a depth of 96.25 ft BGS determined a depth of 92.25 ft
		BGS (97.:	5 - [3.35 + 1]	1.9]). F	Pull casing	(2-5's).	Casing depth is	s 81.01 ft BGS	3(86.46 - [3.35 + 2.1]).
13:42	14:50	(5.0 and 5	.01 ft in len	gth). C	asing depth	is 71.5 f	BGS 76.45 - (	3.35 + 1.6). T	-[3.35 + 2.1]). Pull casing ag revealed a depth of 83.85 ft $[5 + 1.6]$ ). Add 1 sk bentonite.
	15:15	No HPT I BGS (65.4	nelping surv 45 – [3.35 +	ey out : 2.2]).	surveyors (1 A tag revea	5 minute led a dep	s). Pull casing a	4 ft, 2 ft, and 5 73.95 ft BGS	6.0 ft. Casing depth is 59.9 ft (79.5 – [3.35 + 2.2]).
14:50	15.25	Add bento	onite 6 sks.	A tag c	letermined a	depth of	61.65 ft BGS (	67.2 – [3.35 +	2.2]).
and while	15:35		1 1 00	Y Tanl	Farm Con	nduct disc	cussion regardin	g field operati	ons.
15:15	16:30	Secure sit	e and exit T	A Lam	craim. Co				
15:15 15:35	16:30	1.55 1864 (1.65 1.55 1.5	e and exit T	A Tall	Craim. Co.		IEWED BY: MO	•	
15:15 15:35 REPORT	16:30 BY: DE Sko	glie	E. Sko			REV		G Gardner	DATE: 10-9-02

DRILI	LING AND	SAMPL	ING (PE	RCUS	SSION) I	DAILY	WC	ORK RE	CORD	Page 1 of 1
WELL I.D.	: C3830		WELL NUMB	ER: N/	'Α		REPO	ORT NUMBE	R: 91	DATE: September 18, 2002 Wednesday
CONTRAC	CT NUMBER: 82	48-55		STAR	T CARD NO:	S00630			RIG MODEL/NO	9: SIMCO 5000 (Rig 106)
PURPOSE	: Daily Safety m	eeting. Boreh	ole decommissi	ioning ar	nd perk test.	REF 0	EREN	VCE: DFSNV	V-DOW-006, Rev.	LOCATION: TX Tank Farm, 200 West
REFEREN	CE MEASURING	G POINT: Ste	el Plate				TO	OTAL SHIFT	FOOTAGE: 19.05	ft. (decommissioning)
CONSTRU	CTION DESCRI	PTION: N/A	A					ORING DEF		START TIME: 0700
CASING SIZE 7.0 " OD	SET-AT DEPTH NA				START DEPTH 59.90 ft	END DEPTH 40.1 ft.	0	TART: 61.6 ND: 42.6		END TIME: 1630 CONTRACTOR TIME: 0.5 TOTAL TIME: 9.5
500	THE STREET STATES			_	646	DIC CLUM				
DOC	UMENTED DO	WNIIME				ING SUMM				PERSONNEL:
Heal	th physics - 1.0	hrs.			m of 7" OD c					OPERATOR: KC Olson
	CONDITIONS				m of 7" OD ca g (7 in OD) st					DL Curry/DE Morris
					Casing (end o		J. 5111	= 45.45		WA LICENSE #: 1217
	perature – 44F; 0.29; Humidity –		3; Barometric			PLE SUM	MARY	,		OTHER: D Skoglie
pressure 29	.29, riumidity-	- 3370.				201				K Johnson (Optr/PIC)
						N/A				K Hartelius (HPT)
									1	K. Flower/R. Sharpe
										K. Young/F. Hall
T	IME				DESCR	IPTION	OF	OPERATIO	ONS/REMARKS	
FROM	TO	1								
LICOIVI	10						01 0	n Liville	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
	08:25	Conduct da	ily and weekly	safety me	eeting. Comp		25/21/5/5			7:32 the Work Package is on locati
07:00		Back pull ca		. Casing	g @ 56.2 ft BC	lete equipn	nent in	spection with	n no deficiencies. 07 61.7 ft BGS (65.95 –	7:32 the Work Package is on locati [3.35 + 0.9]) 08:37 hrs. Add
07:00 08:25	08:25	Back pull ca bentonite pe	asing to 0.9 S.U ellets (2/3 bucks	. Casing et). Tag	g @ 56.2 ft BO recorded a dep	lete equipn 3S. A tag r oth to botto	nent in eveale m of 5	spection with d a depth of 59.95 ft BGS	n no deficiencies. 07 61.7 ft BGS (65.95 –	[3.35 + 0.9]) 08:37 hrs. Add
07:00 08:25 08:40 10:01	08:25 08:40	Back pull control bentonite por Run tremie	asing to 0.9 S.U ellets (2/3 bucket to a depth of 57 ing determined	Casing et). Tag	g @ 56.2 ft BC recorded a dep GS. Casing sh	lete equipn GS. A tag r pth to botto noe @ 56.2	nent in eveale m of 5	spection with d a depth of 59.95 ft BGS S. Add 2 gal	n no deficiencies. 07 61.7 ft BGS (65.95 –	[3.35 + 0.9]) 08:37 hrs. Add
07:00 08:25 08:40 10:01	08:25 08:40 10:01 10:14	Back pull control bentonite per Run tremie E-tape readi [3.35 + 2.6] Add 4 gallo	asing to 0.9 S.U ellets (2/3 bucket to a depth of 57 ing determined [).	L. Casing et). Tag L.45 ft BO 0.8 feet v	g @ 56.2 ft BC recorded a dep GS. Casing sh water in bore- st as follows:	lete equipm GS. A tag r pth to botto noe @ 56.2 hole. Add	nent in eveale m of 5	spection with a d a depth of 59.95 ft BGS S. Add 2 gal 0 sand (1/2 b	n no deficiencies. 07 61.7 ft BGS (65.95 – lons water. Hydrate ucket). A tag determ	[3.35 + 0.9]) 08:37 hrs. Add 08:50 - 10:01 hrs. tined a depth of 59.05 ft BGS (65.
07:00 08:25 08:40 10:01	08:25 08:40 10:01	Back pull contents put the bentonite put the Run tremie E-tape read [3.35 + 2.6] Add 4 gallo Time	asing to 0.9 S.U ellets (2/3 bucket to a depth of 57 ing determined i).	L. Casing et). Tag L.45 ft BO 0.8 feet v	g @ 56.2 ft BG recorded a dep GS. Casing sh water in bore- st as follows: BGS Measur	lete equipm GS. A tag r pth to botto noe @ 56.2 hole. Add	nent in eveale m of 5	spection with da a depth of 59.95 ft BGS S. Add 2 gal 0 sand (1/2 b	n no deficiencies. 07 61.7 ft BGS (65.95 – lons water. Hydrate ucket). A tag determ	[3.35 + 0.9]) 08:37 hrs. Add 08:50 - 10:01 hrs. tined a depth of 59.05 ft BGS (65.
07:00 08:25 08:40 10:01	08:25 08:40 10:01 10:14	Back pull contents put the bentonite por Run tremie E-tape readi [3.35 + 2.6] Add 4 gallo Time 10:16 10:18	asing to 0.9 S.U ellets (2/3 bucket to a depth of 57 ing determined [).	L. Casing et). Tag L.45 ft BO 0.8 feet v	g @ 56.2 ft BC recorded a dep GS. Casing sh water in bore- st as follows:	lete equipm GS. A tag r pth to botto noe @ 56.2 hole. Add	nent in eveale m of 5	spection with a d a depth of 59.95 ft BGS S. Add 2 gal 0 sand (1/2 b	n no deficiencies. 07 61.7 ft BGS (65.95 – lons water. Hydrate ucket). A tag determ	[3.35 + 0.9]) 08:37 hrs. Add 08:50 - 10:01 hrs. tined a depth of 59.05 ft BGS (65.
07:00 08:25 08:40 10:01	08:25 08:40 10:01 10:14	Back pull co- bentonite por Run tremie E-tape readi [3.35 + 2.6] Add 4 gallo Time 10:16 10:18 10:20	asing to 0.9 S.U ellets (2/3 bucket to a depth of 57 ing determined ()). ons water and m Tape Measurem 62.96 62.98 62.98	L. Casing et). Tag L.45 ft BO 0.8 feet v	g @ 56.2 ft BC recorded a det GS. Casing sh water in bore- st as follows: BGS Measun 57.01 57.03 57.03	lete equipm GS. A tag r pth to botto noe @ 56.2 hole. Add	nent in eveale m of 5	spection with a d a depth of 59.95 ft BGS S. Add 2 gal 0 sand (1/2 but 10:17 10:19 10:21	n no deficiencies. 07 61.7 ft BGS (65.95 – lons water. Hydrate ucket). A tag determ  Tape Measurement 62.97 62.98 62.99	[3.35 + 0.9]) 08:37 hrs. Add  08:50 - 10:01 hrs.  ined a depth of 59.05 ft BGS (65.  BGS Measurement  57.02  57.03  57.04
07:00 08:25 08:40 10:01	08:25 08:40 10:01 10:14	Back pull co- bentonite por Run tremie E-tape read: [3.35 + 2.6] Add 4 gallo Time 10:16 10:18 10:20 10:22	asing to 0.9 S.U ellets (2/3 bucket to a depth of 57 ing determined ()). ons water and m Tape Measurem 62.96 62.98 62.98 62.99	L. Casing et). Tag L.45 ft BO 0.8 feet v	g @ 56.2 ft BC recorded a dep GS. Casing sh water in bore- st as follows: BGS Measun 57.01 57.03 57.03 57.03	lete equipm GS. A tag r pth to botto noe @ 56.2 hole. Add	nent in eveale m of 5	spection with a d a depth of 59.95 ft BGS S. Add 2 gal 0 sand (1/2 b)  Time 10:17 10:19 10:21 10:23	n no deficiencies. 07 61.7 ft BGS (65.95 – lons water. Hydrate ucket). A tag determ  Tape Measurement 62.97 62.98 62.99 62.99	[3.35 + 0.9]) 08:37 hrs. Add  08:50 - 10:01 hrs.  ined a depth of 59.05 ft BGS (65.  BGS Measurement  57.02  57.03  57.04  57.04
07:00 08:25 08:40 10:01	08:25 08:40 10:01 10:14	Back pull co- bentonite por Run tremie E-tape readi [3.35 + 2.6] Add 4 gallo Time 10:16 10:18 10:20	asing to 0.9 S.U ellets (2/3 bucket to a depth of 57 ing determined ()). ons water and m Tape Measurem 62.96 62.98 62.98	L. Casing et). Tag L.45 ft BO 0.8 feet v	g @ 56.2 ft BC recorded a det GS. Casing sh water in bore- st as follows: BGS Measun 57.01 57.03 57.03	lete equipm GS. A tag r pth to botto noe @ 56.2 hole. Add	nent in eveale m of 5	spection with a d a depth of 59.95 ft BGS S. Add 2 gal 0 sand (1/2 b  Time 10:17 10:19 10:21 10:23 10:25	n no deficiencies. 07 61.7 ft BGS (65.95 – lons water. Hydrate ucket). A tag determ  Tape Measurement 62.97 62.98 62.99 62.99 63.0	[3.35 + 0.9]) 08:37 hrs. Add  08:50 - 10:01 hrs.  tined a depth of 59.05 ft BGS (65.)  BGS Measurement  57.02  57.03  57.04  57.04  57.05
07:00 08:25 08:40 10:01	08:25 08:40 10:01 10:14	Back pull co- bentonite por Run tremie E-tape read: [3.35 + 2.6] Add 4 gallo Time 10:16 10:18 10:20 10:22 10:24 10:26 10:32	asing to 0.9 S.U ellets (2/3 bucket to a depth of 57 ing determined i). ons water and m Tape Measurem 62.96 62.98 62.98 62.99 63.0 63.02	L. Casing et). Tag L.45 ft BO 0.8 feet v	g @ 56.2 ft BC recorded a dep GS. Casing sh water in bore- st as follows: BGS Measun 57.01 57.03 57.04 57.04	lete equipm GS. A tag r pth to botto noe @ 56.2 hole. Add	nent in eveale m of 5	spection with a d a depth of 59.95 ft BGS S. Add 2 gal 0 sand (1/2 b)  Time 10:17 10:19 10:21 10:23	n no deficiencies. 07 61.7 ft BGS (65.95 – lons water. Hydrate ucket). A tag determ  Tape Measurement 62.97 62.98 62.99 62.99	[3.35 + 0.9]) 08:37 hrs. Add  08:50 - 10:01 hrs.  ined a depth of 59.05 ft BGS (65.  BGS Measurement  57.02  57.03  57.04  57.04
07:00 08:25 08:40 10:01	08:25 08:40 10:01 10:14	Back pull ci- bentonite po Run tremie E-tape read: [3.35 + 2.6] Add 4 gallo Time 10:16 10:18 10:20 10:22 10:24 10:26 10:32 10:42	asing to 0.9 S.U ellets (2/3 bucket to a depth of 57 ing determined 1). ms water and m Tape Measurem 62.96 62.98 62.98 62.99 63.00 63.02 63.02 63.05	L. Casing et). Tag L.45 ft BO 0.8 feet v	g @ 56.2 ft BC recorded a dep GS. Casing sh water in bore- st as follows: BGS Measun 57.01 57.03 57.04 57.04 57.04 57.05 57.07	lete equipm GS. A tag r pth to botto noe @ 56.2 hole. Add	nent in eveale m of 5	Spection with data depth of 59.95 ft BGS S. Add 2 gal 0 sand (1/2 the second of the se	Tape Measurement 62.97 62.98 62.99 63.0 63.04 63.06	[3.35 + 0.9]) 08:37 hrs. Add  08:50 - 10:01 hrs.  ined a depth of 59.05 ft BGS (65.  BGS Measurement  57.02  57.03  57.04  57.04  57.05  57.05  57.09  57.11
07:00 08:25 08:40 10:01	08:25 08:40 10:01 10:14	Back pull ci- bentonite po Run tremie E-tape readi [3.35 + 2.6] Add 4 gallo Time 10:16 10:18 10:20 10:22 10:24 10:26 10:32 10:42 10:52	asing to 0.9 S.U ellets (2/3 bucket to a depth of 57 ing determined 1). ms water and m Tape Measurem 62.96 62.98 62.98 62.99 63.0 63.02 63.05 63.05 63.08	L. Casing et). Tag L.45 ft BO 0.8 feet v	g @ 56.2 ft BC recorded a dep GS. Casing sh water in bore-lest as follows:  BGS Measun 57.01 57.03 57.04 57.05 57.07 57.04 57.05 57.07 57.10 57.13	lete equipm GS. A tag r pth to botto noe @ 56.2 hole. Add	nent in eveale m of 5	spection with a d a depth of 59.95 ft BGS S. Add 2 gal 0 sand (1/2 to  Time 10:17 10:19 10:21 10:23 10:25 10:27 10:37 10:47 10:57	nno deficiencies. 07 61.7 ft BGS (65.95 – lons water. Hydrate ucket). A tag determ  Tape Measurement 62.97 62.98 62.99 62.99 63.0 63.0 63.04 63.06 63.10	[3.35 + 0.9]) 08:37 hrs. Add  08:50 - 10:01 hrs.  ined a depth of 59.05 ft BGS (65.  BGS Measurement  57.02  57.03  57.04  57.04  57.05  57.05  57.05  57.11  57.15
07:00 08:25 08:40 10:01	08:25 08:40 10:01 10:14	Back pull ci- bentonite po Run tremie E-tape read: [3.35 + 2.6] Add 4 gallo Time 10:16 10:18 10:20 10:22 10:24 10:26 10:32 10:42	asing to 0.9 S.U ellets (2/3 bucket to a depth of 57 ing determined 1). ms water and m Tape Measurem 62.96 62.98 62.98 62.99 63.00 63.02 63.02 63.05	L. Casing et). Tag L.45 ft BO 0.8 feet v	g @ 56.2 ft BC recorded a dep GS. Casing sh water in bore- st as follows: BGS Measun 57.01 57.03 57.04 57.04 57.04 57.05 57.07	lete equipm GS. A tag r pth to botto noe @ 56.2 hole. Add	nent in eveale m of 5	Spection with data depth of 59.95 ft BGS S. Add 2 gal 0 sand (1/2 the second of the se	Tape Measurement 62.97 62.98 62.99 63.0 63.04 63.06	[3.35 + 0.9]) 08:37 hrs. Add  08:50 - 10:01 hrs.  ined a depth of 59.05 ft BGS (65.  BGS Measurement  57.02  57.03  57.04  57.04  57.05  57.05  57.09  57.11
07:00 08:25 08:40 10:01	08:25 08:40 10:01 10:14	Back pull cibentonite po Run tremie E-tape readi [3.35 + 2.6] Add 4 gallo Time 10:16 10:18 10:20 10:22 10:24 10:26 10:32 10:42 10:52 11:02 11:02 11:12	asing to 0.9 S.U ellets (2/3 bucket to a depth of 57 ing determined 1). ms water and m Tape Measurem 62.96 62.98 62.99 62.99 63.0 63.02 63.05 63.08 63.12 63.15 63.18	L. Casing et). Tag L.45 ft BO 0.8 feet v	g @ 56.2 ft BC recorded a dep GS. Casing sh water in bore-st as follows:  BGS Measun 57.01 57.03 57.04 57.04 57.05 57.07 57.10 57.13 57.17 57.20 57.23	lete equipm GS. A tag r pth to botto noe @ 56.2 hole. Add	nent in eveale m of 5	Spection with a day a depth of \$9.95 ft BGS S. Add 2 gal 0 sand (1/2 the second	Tape Measurement 62.97 62.98 62.99 63.0 63.0 63.04 63.06 63.10 63.17 63.17 63.21	[3.35 + 0.9]) 08:37 hrs. Add  08:50 - 10:01 hrs.  ined a depth of 59.05 ft BGS (65.  BGS Measurement  57.02  57.03  57.04  57.04  57.05  57.05  57.09  57.11  57.15  57.17  57.22  57.26
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07:00 08:25 08:40 10:01 10:14	08:25 08:40 10:01 10:14 11:57	Back pull cibentonite policy for the property of the property	asing to 0.9 S.U ellets (2/3 bucket to a depth of 57 ing determined 1). ms water and m Tape Measurem 62.96 62.98 62.98 62.99 63.0 63.02 63.05 63.02 63.12 63.15 63.15 63.25 est (Mr. Syndor	1. Casing t). Tag t.45 ft B0 0.8 feet v conitor tement	g @ 56.2 ft BC recorded a dep GS. Casing sh water in bore-st as follows:  BGS Measun 57.01 57.03 57.04 57.05 57.07 57.10 57.13 57.17 57.20 57.23 57.30 57.30 57.30 57.40 57.10 57.10 57.10 57.10 57.10 57.10 57.20 57.23 57.30 es site. Lunch	lete equipm GS. A tag r pth to botto too @ 56.2 hole. Add	nent in. eveale m of 5 ft BG3 10 – 30	spection with a d a depth of 59.95 ft BGS S. Add 2 gal 0 sand (1/2 to 10.17 to 10.19 to 10.21 to 10.25 to 10.27 to 10.37 to 10.57 to 11.37 to 11.37 to 11.57	Tape Measurement 62.97 62.98 62.99 63.0 63.0 63.04 63.10 63.17 63.21 63.26	[3.35 + 0.9]) 08:37 hrs. Add  08:50 - 10:01 hrs.  ined a depth of 59.05 ft BGS (65.  BGS Measurement  57.02  57.03  57.04  57.05  57.05  57.09  57.11  57.15  57.17  57.22  57.26  57.31
07:00 08:25 08:40 10:01 10:14 11:57 12:53	08:25 08:40 10:01 10:14	Back pull ci- bentonite po Run tremie E-tape readi [3.35 + 2.6] Add 4 gallo Time 10:16 10:18 10:20 10:22 10:24 10:26 10:32 10:42 10:52 11:02 11:12 11:47 Terminate to Pull tremie it BGS (64, recorded 55	asing to 0.9 S.Uellets (2/3 bucket to a depth of 57 ing determined i).  In swater and mr Tape Measurem 62.96 62.98 62.99 63.0 63.02 63.05 63.08 63.12 63.15 63.18 63.25 est (Mr. Syndor from boring. B 1 – [3.35 + 2.0] 2.25 ft BGS (60.	1. Casinget). Tag 1.45 ft B0 0.8 feet v conitor tement  2.45 ft B0 0.8 feet v conitor tement	g @ 56.2 ft BC recorded a dep GS. Casing sh water in bore-less as follows:  BGS Measun 57.01 57.03 57.03 57.04 57.05 57.07 57.10 57.13 57.17 57.20 57.23 57.30 re site. Lunch casing (5.0) 55 sk chips. Ta 5+2.0]. Add	lete equipm GS. A tag r pth to botto too @ 56.2 hole. Add rement 12:23 – 12 5.45 – (3.35 gg recorded to 10 –30 sa	eveale m of 5 ft BGS 10 – 30 even lent in.	spection with a d a depth of 59.95 ft BGS S. Add 2 gal 0 sand (1/2 to  Time 10:17 10:19 10:21 10:23 10:25 10:27 10:37 10:47 10:57 11:07 11:37 11:57	Tape Measurement 62.97 62.98 62.99 63.0 63.04 63.04 63.10 63.17 63.17 63.21 63.26 63.5 Tag revealed a d BGS (61.6 ft - [3.35] g determined bottom	[3.35 + 0.9]) 08:37 hrs. Add  08:50 – 10:01 hrs.  inied a depth of 59.05 ft BGS (65.  BGS Measurement  57.02  57.03  57.04  57.04  57.05  57.05  57.05  57.11  57.15  57.17  57.22  57.26  57.31  epth to bottom measurement of 58 + 2.0]). Add ½ sk bentonite, a ta @ 53 ft BGS (58.35 – [3.35 + 2.35]
07:00 08:25 08:40 10:01 10:14 11:57 11:57	08:25 08:40 10:01 10:14 11:57	Back pull cibentonite per Run tremie E-tape readi [3.35 + 2.6] Add 4 gallo Time 10:16 10:18 10:20 10:22 10:24 10:26 10:32 10:42 10:52 11:02 11:27 11:47 Terminate te Pull tremie ft BGS (64, recorded 55 Pre-mark le each. A tag sand and was gand and was reading and reading reading to the second of	asing to 0.9 S.Uellets (2/3 bucks to a depth of 57 ing determined 1).  Tape Measurem 62.96 62.98 62.99 63.00 63.02 63.05 63.05 63.08 63.12 63.15 63.18 63.15 63.18 63.25 est (Mr. Syndor from boring. B 1 – [3.35 + 2.0] .25 ft BGS (60.00), and to ft tension determined a dater slurry (2.5 g	1. Casing the control of the control	g @ 56.2 ft BC recorded a dep GS. Casing sh water in bore- st as follows:  BGS Measur 57.01 57.03 57.04 57.04 57.04 57.05 57.07 57.10 57.13 57.17 57.20 57.20 57.23 57.30 re site. Lunch casing (5.0) 55 sk chips. Ta 5+2.0]). Adde. Run tremie 1.85 ft BGS ( ach). A tag sf	lete equipm 3S. A tag r pth to botto too @ 56.2 hole. Add rement  12:23 - 12 6.45 - (3.35 g recorded d 10 - 30 sa t through ci 57:2 - [3.3 towed a D1]	:53 6+2.00 a dept mod (5 g assing s 5+2.00 B of 5	Spection with data depth of 59.95 ft BGS S. Add 2 gal 0 sand (1/2 to 10:17 10:19 10:21 10:23 10:25 10:27 10:37 10:47 10:57 11:07 11:17 11:37 11:57  ) = 50.1 ft BG th of 56.25 ft gallon). A tashoe. Place to 0). Pull casi	Tape Measurement 62.97 62.98 62.99 63.0 63.04 63.06 63.10 63.17 63.17 63.21 63.26  GS. Tag revealed a d BGS (61.6 ft – [3.35 g determined bottom ensioneter in boring, ng 5.0, casing @ 48.3 (57.8 – [3.35 + 3.31)	[3.35 + 0.9]) 08:37 hrs. Add  08:50 – 10:01 hrs.  ined a depth of 59.05 ft BGS (65.  BGS Measurement 57.02 57.03 57.04 57.04 57.05 57.05 57.05 57.09 57.11 57.15 57.17 57.22 57.26 57.31  epth to bottom measurement of 58 + 2.0]). Add ½ sk bentonite, a ta @ 53 ft BGS (58.35 – [3.35 + 2.0 Slurry sand and water (2.5 gallor 3 ft BGS (55.45 – [3.35 + 3.3]). A
07:00 08:25 08:40 10:01 10:14 11:57 12:53 13:32	08:25 08:40 10:01 10:14 11:57 12:53 13:32 14:25	Back pull ci- bentonite po Run tremie E-tape readi [3.35 + 2.6] Add 4 gallo Time 10:16 10:18 10:20 10:22 10:22 10:22 10:42 10:52 11:02 11:12 11:47 Terminate to Pull tremie ft BGS (64. recorded 55 Pre-mark le each. A tag sand and wa Add sand 2. jacks is 150	asing to 0.9 S.Uellets (2/3 bucket to a depth of 57 ing determined 1).  Instruction of the second of	D. Casing the control of the control	g @ 56.2 ft BC recorded a dep GS. Casing sh water in bore- st as follows:  BGS Measun 57.01 57.03 57.04 57.05 57.07 57.10 57.10 57.13 57.17 57.20 57.23 57.30 re site. Lunch casing (5.0) 55 sk chips. Ta 6+2.0]). Add le. Run temie 51.85 ft BGS ( ach). A tag sh pined a DTB o BGS (45.45 –	12:23 – 12 5.45 – (3.35 g recorded ti 10 – 30 sa ti through cu 57.2 – [3.3 towed a DT f 50.15 ft E [3.35 + 2.4 towed a DT f 50.15 ft E [3.	:53 + 2.00 a depth of 5 5 5 + 2.00 B of 5 B of 5 DD). A	Time 10:17 10:21 10:25 10:27 10:37 10:47 10:57 11:07 11:17 11:57 11:57 11:57 11:57 11:57 11:57 11:57 11:57 11:57 11:57 11:57 11:57 11:57 11:57 11:57	Tape Measurement 62.97 62.98 62.99 62.99 63.0 63.0 63.17 63.17 63.17 63.26 GS. Tag revealed a d BGS (61.6 ft – [3.35 g determined bottom ensiometer in boring, ng 5.0, casing @ 48.3 (57.8 – [3.35 + 3.3]) 3.3]). Pull casing (54.95 ft BC displays ft	[3.35 + 0.9]) 08:37 hrs. Add  08:50 – 10:01 hrs.  inied a depth of 59.05 ft BGS (65.  BGS Measurement  57.02  57.03  57.04  57.05  57.05  57.09  57.11  57.15  57.17  57.22  57.26  57.31  epth to bottom measurement of 58  + 2.0]). Add ½ sk bentonite, a ta (2.6)  2.6 St BGS (58.35 – [3.35 + 2.0]). Add 18 BGS (58.35 – [3.35 + 3.3]). A  1.0). Pulling pressure on the hydra 18 (55.3 – [3.35 + 2.0]).
07:00 08:25 08:40 10:01 10:14 11:57 12:53 13:32 14:25 15:12	08:25 08:40 10:01 10:14 11:57 12:53 13:32 14:25 15:12 16:30	Back pull ci- bentonite po Run tremie E-tape readi [3.35 + 2.6] Add 4 gallo Time 10:16 10:18 10:20 10:22 10:22 10:22 10:42 10:52 11:02 11:12 11:47 Terminate to Pull tremie ft BGS (64. recorded 55 Pre-mark le each. A tag sand and wa Add sand 2. jacks is 150	asing to 0.9 S.Uellets (2/3 bucket to a depth of 57 ing determined 1).  Instruction of the second of	D. Casing the control of the control	g @ 56.2 ft BC recorded a dep GS. Casing sh water in bore- st as follows:  BGS Measun 57.01 57.03 57.04 57.05 57.07 57.10 57.10 57.13 57.17 57.20 57.23 57.30 re site. Lunch casing (5.0) 55 sk chips. Ta 6+2.0]). Add le. Run temie 51.85 ft BGS ( ach). A tag sh pined a DTB o BGS (45.45 –	12:23 – 12 5.45 – (3.35 g recorded ti 10 – 30 sa ti through cu 57.2 – [3.3 towed a DT f 50.15 ft E [3.35 + 2.4 towed a DT f 50.15 ft E [3.	:53 + 2.00 a depth of 5 5 5 + 2.00 B of 5 B of 5 5 (5) B) (5)	Time 10:17 10:21 10:25 10:27 10:37 10:47 10:57 11:07 11:17 11:57 11:57 11:57 11:57 11:57 11:57 11:57 11:57 11:57 11:57 11:57 11:57 11:57 11:57 11:57	Tape Measurement 62.97 62.98 62.99 62.99 63.0 63.0 63.17 63.17 63.17 63.26 GS. Tag revealed a d BGS (61.6 ft – [3.35 g determined bottom ensiometer in boring, ng 5.0, casing @ 48.3 (57.8 – [3.35 + 3.3]) 3.3]). Pull casing (54.95 ft BC displays ft	[3.35 + 0.9]) 08:37 hrs. Add  08:50 – 10:01 hrs.  inied a depth of 59.05 ft BGS (65.  BGS Measurement  57.02  57.03  57.04  57.04  57.05  57.05  57.05  57.09  57.11  57.15  57.17  57.22  57.26  57.31  epth to bottom measurement of 58 + 2.0]). Add ½ sk bentonite, a ta @ 53 ft BGS (58.35 – [3.35 + 2.0  Slurry sand and water (2.5 gallor 8 ft BGS (55.45 – [3.35 + 3.3]). Add.  1.0). Pulling pressure on the hydra
07:00 08:25 08:40 10:01 10:14 11:57 12:53 13:32 14:25 15:12 REPORT B	08:25 08:40 10:01 10:14 11:57 12:53 13:32 14:25 15:12 16:30 BY: DE Skoglie	Back pull cibentonite per Run tremie E-tape readi [3.35 + 2.6] Add 4 gallo Time 10:16 10:18 10:20 10:22 10:24 10:26 10:32 11:02 11:12 11:27 11:47 Terminate to Pull tremie ft BGS (64, recorded 55 Pre-mark leich each. A tag sand and ward Add sand 2. Add 4 sks b Add 4 sks b	asing to 0.9 S.Uellets (2/3 bucket to a depth of 57 ing determined 1).  Instruction of the second of	2. Casing the Control of the Control	g @ 56.2 ft BC recorded a dep GS. Casing sh water in bore- st as follows:  BGS Measun 57.01 57.03 57.04 57.05 57.07 57.10 57.10 57.13 57.17 57.20 57.23 57.30 re site. Lunch casing (5.0) 55 sk chips. Ta 6+2.0]). Add le. Run temie 51.85 ft BGS ( ach). A tag sh pined a DTB o BGS (45.45 –	lete equipm 3S. A tag r pth to botto toe @ 56.2 hole. Add rement  12:23 – 12 5.45 – (3.35 g recorded 1 10 – 30 sa 15:7.2 – [3.3 toewed a DT f (3.35 + 2.4 to rement 42.6  REV	:53 f BG3 f + 2.0 a dept mod (5 g s 5 5 + 2.0 B of 5 GGS (5) EMB of 5 MB of 5	Spection with data depth of 59.95 ft BGS S. Add 2 gal 0 sand (1/2 to 10.17 to 10.17 to 10.19 to 10.21 to 10.23 to 10.25 to 10.27 to 10.37 to 10.47 to 10.57 to 11.57 to 11.57 to 56.25 ft gallon). A tata showed so (47.95 – [3.35 + tag showed to 5 (47.95 – [3.35 + ta	Tape Measurement 62.97 62.98 62.99 63.0 63.04 63.04 63.10 63.17 63.17 63.21 63.26 GS. Tag revealed a d BGS (61.6 ft – [3.35 g determined bottom ensiometer in boring, g 5.0, casing @ 48.1 (57.8 – [3.35 + 3.3]) 3.3]). Pull casing (6 a DTB of 49.95 ft BC (35.75 casing @ 48.1 a DTB of 49.95 ft BC (35.75 casing @ 48.3 a DTB of	[3.35 + 0.9]) 08:37 hrs. Add  08:50 – 10:01 hrs.  inied a depth of 59.05 ft BGS (65.  BGS Measurement 57.02 57.03 57.04 57.04 57.05 57.09 57.11 57.15 57.17 57.22 57.26 57.31  epth to bottom measurement of 58 + 2.0]). Add ½ sk bentonite, a ta @ 53 ft BGS (58.35 – [3.35 + 2.0] Slurry sand and surer (2.5 gallor aft BGS (55.45 – [3.35 + 3.3]). A  1.0). Pulling pressure on the hydra 15 (55.3 – [3.35 + 2.0]).
07:00 08:25 08:40 10:01 10:14 11:57 12:53 13:32 14:25 15:12 REPORT B	08:25 08:40 10:01 10:14 11:57 12:53 13:32 14:25 15:12 16:30	Back pull cibentonite per Run tremie E-tape readi [3.35 + 2.6] Add 4 gallo Time 10:16 10:18 10:20 10:22 10:24 10:26 10:32 11:02 11:12 11:27 11:47 Terminate to Pull tremie ft BGS (64, recorded 55 Pre-mark leich each. A tag sand and ward Add sand 2. Add 4 sks b Add 4 sks b	asing to 0.9 S.Uellets (2/3 bucket to a depth of 57 ing determined 1).  Instruction of the second of	2. Casing the Control of the Control	g @ 56.2 ft BC recorded a dep GS. Casing sh water in bore- st as follows:  BGS Measun 57.01 57.03 57.04 57.05 57.07 57.10 57.10 57.13 57.17 57.20 57.23 57.30 re site. Lunch casing (5.0) 55 sk chips. Ta 6+2.0]). Add le. Run temie 51.85 ft BGS ( ach). A tag sh pined a DTB o BGS (45.45 –	lete equipm 3S. A tag r pth to botto toe @ 56.2 hole. Add rement  12:23 – 12 5.45 – (3.35 g recorded 1 10 – 30 sa 15:7.2 – [3.3 toewed a DT f (3.35 + 2.4 to rement 42.6  REV	:53 f BG3 f + 2.0 a dept mod (5 g s 5 5 + 2.0 B of 5 GGS (5) EMB of 5 MB of 5	Spection with data depth of 59.95 ft BGS S. Add 2 gal 0 sand (1/2 to 10.17 to 10.17 to 10.19 to 10.21 to 10.23 to 10.25 to 10.27 to 10.37 to 10.47 to 10.57 to 11.57 to 11.57 to 56.25 ft gallon). A tata showed so (47.95 – [3.35 + tag showed to 5 (47.95 – [3.35 + ta	Tape Measurement 62.97 62.98 62.99 63.0 63.0 63.0 63.0 63.01 63.17 63.17 63.21 63.21 63.26  GS. Tag revealed a d BGS (61.6 ft – [3.35 g determined bottom ensiometer in boring- ng 5.0, casing @ 48.1 (57.8 – [3.35 + 3.3]) 3.3]). Pull casing (6 a DTB of 49.95 ft BG 35 + 2.0]). Casing @	[3.35 + 0.9]) 08:37 hrs. Add  08:50 – 10:01 hrs.  inied a depth of 59.05 ft BGS (65.  BGS Measurement 57.02 57.03 57.04 57.04 57.05 57.09 57.11 57.15 57.17 57.22 57.26 57.31  epth to bottom measurement of 58 + 2.0]). Add ½ sk bentonite, a ta @ 53 ft BGS (58.35 – [3.35 + 2.0] Slurry sand and surer (2.5 gallor aft BGS (55.45 – [3.35 + 3.3]). A  1.0). Pulling pressure on the hydra 15 (55.3 – [3.35 + 2.0]).

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DRILL	ING AND	SAMPL				AILY	WORK RE	CORD	Page 1 of 1
WELL I.D	: C3830		WELL NUM	BER:	N/A		REPORT NUMI	BER: 92	DATE: September 19, 2002 Thursday
CONTRAC	CT NUMBER:	8248-55		STAR	RT CARD NO	: S00630		RIG MODEL	NO: SIMCO 5000 (Rig 106)
PURPOSE	: Daily Safety	meeting. B	orehole decor	nmissio	oning.	RE	FERENCE: DFS v. 0	NW-DOW-006,	LOCATION: TX Tank Farm, 200 West
REFEREN	CE MEASUR	ING POINT:	Steel Plate			516	TOTAL SHI	T FOOTAGE: 4	2.6 ft. (decommissioning)
CONSTR	UCTION DE	SCRIPTIO	N: N/A				BORING D		START TIME: 0700
CASING	SET- AT DEPTH	TYPE CASING	CASING DIMENSION DEPTH I				START: 42	.6 ft .0 ft	END TIME: 1630 CONTRACTOR TIME: 0.5 TOTAL TIME: 9.5
7.0 " OD									
DO	CUMENTED	DOWNT	VE.	_		ASING	SUMMARY		DEBGOVAVEL
DO	CUMENTED	DOWNIII	ME	Pott		9 (21) (21) (31)	(start of shift)	= 40.6 ft.	PERSONNEL: OPERATOR: KC Olson
	Minima	al					(end of shift)	= 0.0 ft.	DL Curry/DE Morris
WEATHE	R CONDITION		2716)				p (end of shift)	The second secon	WA LICENSE #: 1217
		01.0 (0.0 .	/		l Casing (en			= 0.0 ft.	OTHER: D Skoglie
	ure 59F; Wi		ımidity				SUMMARY		K Johnson (Optr/PIC)
74%; Bar	ometric press	sure 29.24.		Ž.					R. Ancelet (HPT)
						N	/A		K. Flower/R. Sharpe
									K. Young/F. Hall
	ME				DESCR	IPTION	OF OPERATION	ONS/REMARKS	
FROM	TO		Tage Section 14 Control Section		20 SCL1				
07:00	07:50					-	nspection with n		
07:50	08:35	measureme	ent of 42.25 ft	BGS (	47.9 – [3.35 +	+ 2.3]). /	Add 5 sks benton	ite. A tag determ	aled a depth to bottom ined depth to be 32.25 ft BGS.
08:35	09:10		ent of 32.2 ft 1						vealed a depth to bottom ined depth to be 22.45 ft BGS (28.
09:10	10:10	Pull casing section of in TX Tan	casing. The F	depth is IPT stat	s 15.29 ft BG ted 450 cts/m	S (20.44 inute (no	– [3.35 + 1.8]). n-smearable). T	Radiological cont his section of casi	amination was found on this ng was double sleeved and secure
10:10	11:25	Pull casing 22.35 ft BO	5.0. Casing GS (27.8 – [3.	35 + 2.	1]). Add 5 3/	4 sks ber	ntonite. A tag de	termined depth to	ppth to bottom measurement of be 10.6 ft BGS (15.25 – [3.35 + 13.65 – [3.35 + 1.3]).
11:25	11:47	depth to bo		BGS (					gallons sand through casing. A tage ermined depth to bottom is 6.9 ft
11:47	12:20	tremie and Add sand	5 gallons san 3.3 gallons. A	d through tag det	gh casing. A termined dept	tag depti th to bott	n to bottom is 4.3 om is 2.9 ft BGS	5 ft BGS (11.7 – (11.25 – [3.35 +	ed (slurried) 5 gallon water through [3.35 + 4.0]). Pull casing 1 ft. 5.0]). Add bentonite 1.7 gallons. (10.44 - [3.35 + 5.5]).
12:20	13:50		s filled with n pletion. The				lecommissioned/	completed. BSE	personnel worked through lunch to
13:50	14:30	lunch							
4:30	16:30	Remove ar	d disassemble	e remai	ning casing st	tring (sho	e and short secti	ons). Area is secu	ured.
REPORT	BY: DE Skog	glie				RE	<i>VIEWED BY</i> : N	IG Gardner	
	ield Team L	ead - 1	E. Shos	0 -	8		LE: Project M NATURE:		DATE: 10-4-02
	JRE: 👃								

DRILL	ING AND	SAMPL	ING (PE	RCUS	SSION) D	AILY	WORK REC	CORD	Page 1 of 1			
WELL I.D	.: C3830		WELL NUM	BER:	N/A		REPORT NUMBE	'R: 93	DATE: September 20, 2002 Friday			
CONTRAC	CT NUMBER:	8248-55		STAR	RT CARD NO	: S00630	R.	RIG MODEL	NO: SIMCO 5000 (Rig 106)			
PURPOSE demobiliza	E: Daily Safety ation.	meeting. E	quipment surv	ey and		RE	LOCATION: TX Tank Farm, West					
REFEREN	ICE MEASUR	ING POINT:	Steel Plate				TOTAL SHIFT	FOOTAGE: 0	.0 ft.			
CONSTR	UCTION DE	SCRIPTIO	N: N/A				BORING DE		START TIME: 0700			
CASING SET- SIZE AT CASING DIMEN					START DEPTH	END DEPTI	START: 0.0		END TIME: 15:30 CONTRACTOR TIME: 0.5 TOTAL TIME: 8.5			
7.0 " OD	NA	CS	Shoe, 7.5 "	OD	0.0 ft	0.0 ft.	Production in the second					
DO	CUMENTED	DOWNTI	MF	Γ		ASING	SUMMARY		PERSONNEL:			
DO	COMENTEL	DOWNIN	nL	Botte				= 0.0 ft.	OPERATOR: KC Olson			
Operato	or/Health Phy	sics – 4 hrs	i.					= 0.0 ft.	DL Curry/DE Morris			
WEATHE	R CONDITI	ONS (373-2	2716)			The second secon	(end of shift) =	= 0.0 ft.	WA LICENSE #: 1217			
			(103-31 <b>6</b> ).	Tota	1 Casing =			= 0.0 ft.	OTHER: D Gostovich			
	N/A					AMPLE	SUMMARY		K Johnson (Optr/PIC)			
						N			R. Ancelet (HPT)			
						14/	A					
T	IME				DESCR			NS/RFMARKS				
FROM	IME TO				50 (1755) 740 (5	IPTION	OF OPERATION					
FROM			daily safety i		g. A discus	IPTION	OF OPERATION		tivities. No operator coverage			
	TO	today, wh		at the	g. A discus fork lift can	IPTION ssion wa	OF OPERATION					
FROM 07:00 07:30	TO 07:30	today, wh	es with work or enters TX	at the packa	g. A discus fork lift can age @ 08:00	IPTION sion wa not be o	OF OPERATIONS sheld regarding sperated.	anticipated ac				
FROM 07:00 07:30	TO 07:30	PIC arrive Contracto placed on	es with work or enters TX	packa Tank F	g. A discus fork lift can age @ 08:00 Farm. The j.	IPTION sion wa not be o	OF OPERATIONS sheld regarding sperated.	anticipated ac	tivities. No operator coverage			
FROM 07:00 07:30 08:30	TO 07:30 08:30	PIC arrive Contracto placed on	es with work or enters TX pallets.	packa Tank F	g. A discus fork lift can age @ 08:00 Farm. The j.	IPTION sion wa not be o	OF OPERATIONS sheld regarding sperated.	anticipated ac	tivities. No operator coverage			
FROM 07:00 07:30 08:30	TO 07:30 08:30	today, wh PIC arrive Contracto placed on The TX T Lunch	es with work or enters TX pallets. Cank Farm ga	packa Tank F	g. A discus fork lift can age @ 08:00 Farm. The j.	ssion wa not be o hrs.	OF OPERATIONS held regarding sperated.	anticipated act	tivities. No operator coverage			
FROM 07:00 07:30 08:30	TO 07:30 08:30	today, wh PIC arrive Contracto placed on The TX T Lunch BSE load	es with work or enters TX pallets. Cank Farm ga	packa Tank F nte was	g. A discus fork lift can age @ 08:00 Farm. The just locked.	IPTION sion was not be of hrs. acks wer	OF OPERATIONS held regarding sperated.	anticipated act	Support equipment was			
FROM 07:00 07:30 08:30	TO 07:30 08:30 12:00 12:30	today, wh PIC arrive Contracto placed on The TX T Lunch BSE load	es with work or enters TX pallets. Cank Farm ga	packa Tank F nte was	g. A discus fork lift can age @ 08:00 Farm. The just locked.	IPTION sion was not be of hrs. acks wer	OF OPERATIONS held regarding sperated.	anticipated act	Support equipment was			
FROM 07:00 07:30 08:30	TO 07:30 08:30 12:00 12:30	today, wh PIC arrive Contracto placed on The TX T Lunch BSE load	es with work or enters TX pallets. Cank Farm ga	packa Tank F nte was	g. A discus fork lift can age @ 08:00 Farm. The just locked.	IPTION sion was not be of hrs. acks wer	OF OPERATIONS held regarding sperated.	anticipated act	Support equipment was			
FROM 07:00 07:30 08:30	TO 07:30 08:30 12:00 12:30	today, wh PIC arrive Contracto placed on The TX T Lunch BSE load	es with work or enters TX pallets. Cank Farm ga	packa Tank F nte was	g. A discus fork lift can age @ 08:00 Farm. The just locked.	IPTION sion was not be of hrs. acks wer	OF OPERATIONS held regarding sperated.	anticipated act	Support equipment was			
FROM 07:00 07:30 08:30	TO 07:30 08:30 12:00 12:30	today, wh PIC arrive Contracto placed on The TX T Lunch BSE load	es with work or enters TX pallets. Cank Farm ga	packa Tank F nte was	g. A discus fork lift can age @ 08:00 Farm. The just locked.	IPTION sion was not be of hrs. acks wer	OF OPERATIONS held regarding sperated.	anticipated act	Support equipment was			
FROM 07:00 07:30 08:30 12:00 12:30	TO 07:30 08:30 12:00 12:30	today, wh PIC arrive Contracto placed on The TX T Lunch BSE load Documen	es with work or enters TX pallets. Cank Farm ga	packa Tank F nte was	g. A discus fork lift can age @ 08:00 Farm. The just locked.	ssion was not be of hrs. acks were	OF OPERATIONS held regarding sperated.	anticipated activork platform.  Equipment w	Support equipment was as cleaned and put away.			
FROM 07:00 07:30 08:30 12:00 12:30	TO 07:30 08:30 12:00 12:30	today, wh PIC arrive Contracto placed on The TX T Lunch BSE load Documen	ich means these with works or enters TX pallets.  Tank Farm gated miscellant tation was common to the common tation was common to the common tation was common tation.	rank F Tank F ate was eous o	g. A discus fork lift can age @ 08:00 Farm. The j. s locked.	ssion was not be of hrs. acks were	OF OPERATIONS held regarding sperated.  The moved to the value to the yard.	anticipated activork platform.  Equipment w	Support equipment was			

DRILI	ING AND	SAMPL	ING (PEI	RCUS	SSION) D	AILY	YV	VORK REC	ORD	Page 1 of 1				
WELL I.I	D.: C3830		WELL NUM	BER:	N/A		RE	EPORT NUMBE.	R: 94	DATE: September 23, 2002 Monday				
CONTRA	CT NUMBER:	8248-55		STAR	RT CARD NO	: S0063	0		RIG MODEL	/NO: SIMCO 5000 (Rig 106)				
PURPOS demobiliz	E: Daily Safety ation.	meeting. E	quipment surv	ey and		RE Re	W-DOW-006,	LOCATION: TX Tank Farm, 2 West						
REFERE	NCE MEASUR	ING POINT:	Steel Plate					TOTAL SHIFT	FOOTAGE: 0	.0 ft.				
CONSTR	RUCTION DE	SCRIPTIO	N: N/A					BORING DE		START TIME: 0700				
CASING SET- SIZE AT CASING DIME					START DEPTH	END DEPT	Color of	START: 0.0 f		END TIME: 16:30 CONTRACTOR TIME: 0.5 TOTAL TIME: 9.5				
7.0 " OD	NA	CS	Shoe, 7.5 "	OD	0.0 ft	0.0 ft.								
DOCUMENTED DOWNTIME  Bottom of								/MMARY	= 0.0 ft.	PERSONNEL: OPERATOR: KC Olson				
	N/A				om of 7" OI				0.0 ft.	DL Curry/DE Morris				
WEATH.	ER CONDITI	ONS (373-2	2716)				-	end of shift) =		WA LICENSE #: 1217				
			8.20	Tota	1 Casing =				0.0 ft.	OTHER: D Gostovich				
	N/A					SAMPL.	ES	UMMARY		K Johnson (Optr/PIC)				
						N	N/A			R. Sharp R. Ancelet (HPT) K. Hartelius				
7	TIME				DESCR	IDTION	V.O.	F OPERATION	IC/DEMADES					
FROM	TO				DESCR	IFTION	V O	r OFERATION	NS/KEMAKKS					
07:00	07:45	Conduct	daily safety i	neetin	g. A discus	ssion w	as h	eld regarding a	anticipated act	tivities.				
07:45								moved to the was were removed		All pipe and support rk platform.				
	10:00	The drill	unit's mast v	vas lay	ed over and	secure	d.							
10:00	11:30	The drill	trailer was n	noved t	to the gate b	y the T	`ean	nster. Health P	hysics started	the survey of the drill unit.				
11:30	12:20	Lunch												
12:20										liological waste).				
		The drill	unit's survey	was c	ompleted @	15:30	hrs	. The drill trai	ler was moved	out of the TX Tank Farm.				
	15:45		red. The T			was loc	cked	l,						
15:45	16:30	BSE work	ked on the di	ill uni	t.									
								51. Po de cara	Parameter No. 7					
Loboromoni						RI	EVI	EWED BY: MO	Gardner					
	BY: DE Gos					1950				STREET, ST.				
TITLE:			Skoglii	. ,	,	TI	ITL	E: Project Mar	nager	DATE: 10-9-02				

WELL I.D	not constant and	SAMIL	WELL NUM	+		AIL	Г	VORK REC		Page 1 of 1	
WELL I.L	ATRACT NUMBER: 8248-55  RPOSE: Daily Safety meeting. Equipment solitization.  REFERENCE MEASURING POINT: Steel Plance of the NSTRUCTION DESCRIPTION: N/A  ASING SET-AT TYPE DRIVE AT DEPTH CASING DIME	WELL NOW	DEK:	N/A		KI	EPOKI NUMBE	K: 95	DATE: September 24, 2002 Tuesday		
				1000000	RT CARD NO					NO: SIMCO 5000 (Rig 106)	
		meeting. E	quipment sur	vey and	i	R	LOCATION: TX Tank Farm, 2 West				
REFERE	VCE MEASUR	ING POINT:	Steel Plate					TOTAL SHIFT	FOOTAGE: 0	.0 ft.	
CONSTR		SCRIPTIO	N: N/A					BORING DE		START TIME: 0700 END TIME: 16:30	
SIZE AT CASING DIMEN					START DEPTH	ENI DEPT	5000 mal	START: 0.0 1		CONTRACTOR TIME: 0.5 TOTAL TIME: 9.5	
7.0 " OD	NA	CS	Shoe, 7.5 "	OD	0.0 ft	0.0 ft.					
77.65	N/A ER CONDITI			Bott	tom of 7 " Ol tom of 7" OI ing (7 in OD al Casing =	D casin D casin ) stick	ng (s ng (e up (	nd of shift) = (end of shift) =	= 0.0 ft. = 0.0 ft. = 0.0 ft. = 0.0 ft.	PERSONNEL: OPERATOR: KC Olson DL Curry/DE Morris WA LICENSE #: 1217 OTHER: D Gostovich K Johnson (Optr/PIC)	
						1	N/A			R. Sharp R. Ancelet (HPT) K. Hartelius	
	IME				DESCR			F OPERATION	IS/REMARKS	R. Ancelet (HPT) K. Hartelius	
FROM	TO	Conduct	daily cafaty	maatin	13 030875270	IPTIO	N 0.	F OPERATION		R. Ancelet (HPT) K. Hartelius	
		245 St. 101 - 204	or enters TX		ng. A discus	IPTIO!	V O.	F OPERATION	anticipated act	R. Ancelet (HPT) K. Hartelius	
FROM 07:00	TO 07:30	Contracto	or enters TX		ng. A discus	IPTIO!	V O.	F OPERATION	anticipated act	R. Ancelet (HPT) K. Hartelius	
FROM 07:00 07:30	TO 07:30 11:30	Contractor Duratek y Lunch	or enters TX vard.	Tank	ng. A discus Farm. Equip	IPTIO!	V O	F OPERATION neld regarding a aded on the fla	anticipated act	R. Ancelet (HPT) K. Hartelius	
FROM 07:00 07:30	TO 07:30 11:30	Contractor Duratek y Lunch Demobili	or enters TX vard. zed equipmend organized	Tank	ng. A discus Farm. Equip	IPTIO!	V O	F OPERATION neld regarding a aded on the fla	anticipated act	R. Ancelet (HPT) K. Hartelius tivities. pment trailer and hauled to the	
FROM 07:00 07:30	TO 07:30 11:30	Contractor Duratek y Lunch Demobility cleaned a	or enters TX vard. zed equipmend organized	Tank	ng. A discus Farm. Equip	IPTIO!	V O	F OPERATION neld regarding a aded on the fla	anticipated act	R. Ancelet (HPT) K. Hartelius tivities. pment trailer and hauled to the	
FROM 07:00 07:30	TO 07:30 11:30	Contractor Duratek y Lunch Demobility cleaned a	or enters TX vard. zed equipmend organized	Tank	ng. A discus Farm. Equip	IPTIO!	V O	F OPERATION neld regarding a aded on the fla	anticipated act	R. Ancelet (HPT) K. Hartelius tivities. pment trailer and hauled to the	
FROM 07:00 07:30	TO 07:30 11:30	Contractor Duratek y Lunch Demobility cleaned a	or enters TX vard. zed equipmend organized	Tank	ng. A discus Farm. Equip	IPTIO!	V O	F OPERATION neld regarding a aded on the fla	anticipated act	R. Ancelet (HPT) K. Hartelius tivities. pment trailer and hauled to the	
FROM 07:00 07:30 11:30	TO 07:30 11:30	Contractor Duratek y Lunch Demobility cleaned a	or enters TX vard. zed equipmend organized	Tank	ng. A discus Farm. Equip	IPTIO!	V O	F OPERATION neld regarding a aded on the fla	anticipated act	R. Ancelet (HPT) K. Hartelius tivities. pment trailer and hauled to the	
FROM 07:00 07:30 11:30 12:20	TO 07:30 11:30	Contractor Duratek y Lunch Demobili cleaned a Area Secont	or enters TX  vard.  zed equipment organized organized.	Tank	ng. A discus	iPTIO!	vas lis lo	F OPERATION neld regarding a aded on the fla	anticipated act	R. Ancelet (HPT) K. Hartelius tivities. pment trailer and hauled to the	

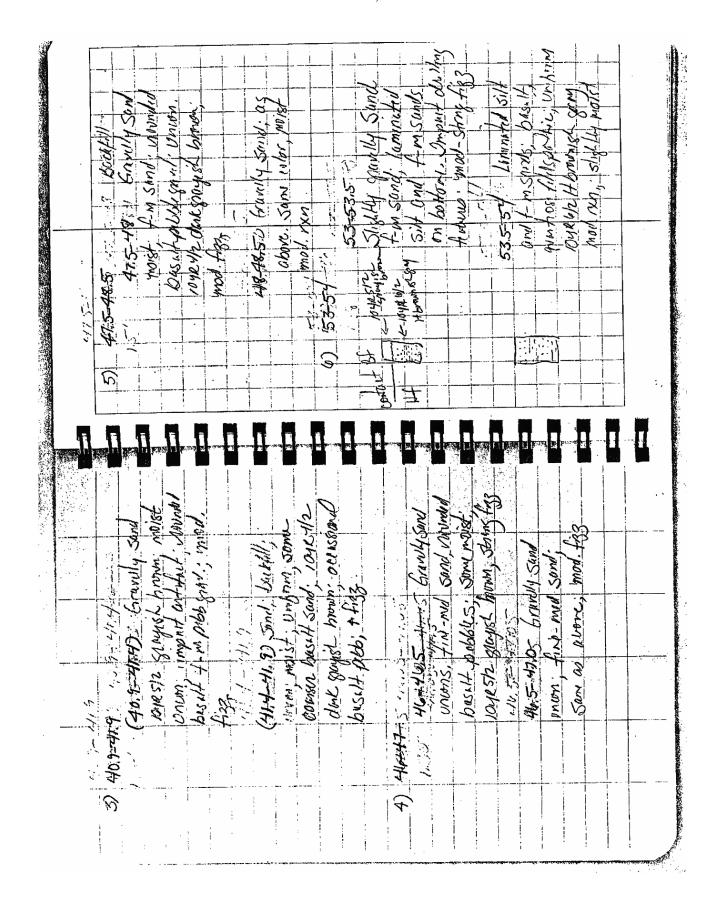
CONTRACT NUMBER: 8248-55  START CARD NO: S00630  RIG MODEL/NO: PURPOSE: Daily Safety meeting. Equipment survey and demobilization. Last Report.  REFERENCE MEASURING POINT: Steel Plate  CONSTRUCTION DESCRIPTION: N/A  CASING SET- AT TYPE DRIVE POINT START DEPTH N/A  DOCUMENTED DOWNTIME  N/A  WEATHER CONDITIONS (373-2716)  N/A  WEATHER CONDITIONS (373-2716)  N/A  DESCRIPTION OF OPERATIONS/REMARKS  FROM TO  07:00 07:30 Conduct daily safety meeting. A discussion was held regarding anticipated activition of the state of the	ATE: September 25, 2002 Vednesday : SIMCO 5000 (Rig 106) OCATION: TX Tank Farm, 20 Vest  A: TART TIME: 0700 ND TIME: 16:30 ONTRACTOR TIME: 0.5 OTAL TIME: 9.5									
PURPOSE: Daily Safety meeting. Equipment survey and demobilization. Last Report.  REFERENCE MEASURING POINT: Steel Plate  CONSTRUCTION DESCRIPTION: N/A  CASING SIZE AT DEPTH CASING DIMENSION DEPTH DEPTH DEPTH DEPTH CASING DIMENSION DEPTH DE	OCATION: TX Tank Farm, 20 Vest t. TART TIME: 0700 ND TIME: 16:30 ONTRACTOR TIME: 0.5									
demobilization. Last Report.  Rev. 0  We report to the first of the first o	Vest  TART TIME: 0700  ND TIME: 16:30  ONTRACTOR TIME: 0.5									
CONSTRUCTION DESCRIPTION: N/A  CASING SIZE DEPTH AT CASING DIMENSION DEPTH DEPTH DEPTH AT CASING DEPTH CASING DIMENSION DEPTH	TART TIME: 0700 ND TIME: 16:30 ONTRACTOR TIME: 0.5									
CASING SIZE AT TYPE DIMENSION DEPTH DEPTH DEPTH OF ONE CASING SIZE AT CASING DIMENSION DEPTH DEPTH DEPTH DEPTH OF ONE CASING DIMENSION DEPTH DEP	ND TIME: 16:30 ONTRACTOR TIME: 0.5									
CASING SIZE AT DEPTH CASING DIMENSION DEPTH DEPT	ONTRACTOR TIME: 0.5									
DOCUMENTED DOWNTIME    CASING SUMMARY   PROCEEDING SUMMARY   Bottom of 7 " OD casing (start of shift) = 0.0 ft.   OF SUMMARY   DESCRIPTION OF OPERATIONS/REMARKS   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY   CASING (7 in OD) stick up (end of shift) = 0.0 ft.   OF SUMMARY										
N/A  WEATHER CONDITIONS (373-2716)  N/A  WEATHER CONDITIONS (373-2716)  N/A  DESCRIPTION OF OPERATIONS/REMARKS  TIME  FROM TO  07:00 07:30 Conduct daily safety meeting. A discussion was held regarding anticipated activition of the discussion of the discussion was held regarding anticipated activition of the discussion of the discussio										
N/A  WEATHER CONDITIONS (373-2716)  N/A  WEATHER CONDITIONS (373-2716)  N/A  DESCRIPTION OF OPERATIONS/REMARKS  TIME  FROM TO  07:00 07:30 Conduct daily safety meeting. A discussion was held regarding anticipated activition of the discussion of the discussion was held regarding anticipated activition of the discussion of the discussio	ERCOLUET									
N/A  WEATHER CONDITIONS (373-2716)  N/A  WEATHER CONDITIONS (373-2716)  N/A  Bottom of 7" OD casing (end of shift) = 0.0 ft.  Casing (7 in OD) stick up (end of shift) = 0.0 ft.  Total Casing = = 0.0 ft.  N/A  N/A  N/A  DESCRIPTION OF OPERATIONS/REMARKS  R.  K.  DESCRIPTION OF OPERATIONS/REMARKS  TO 07:00 07:30 Conduct daily safety meeting. A discussion was held regarding anticipated activities of the contractor enters TX Tank Farm. Equipment is loaded on the flatbed and equipment Duratek yard. All equipment is removed from the TX Tank Farm.  10:30 11:30 Haul materials/equipment to Duratek's yard.  11:30 12:00 Lunch  Items were hauled to Duratek's yard where items were cleaned and organized.	ERSONNEL: PERATOR: KC Olson									
WEATHER CONDITIONS (373-2716)  N/A  Casing (7 in OD) stick up (end of shift) = 0.0 ft.  Total Casing = = 0.0 ft.  SAMPLE SUMMARY  N/A  R.  N/A  PESCRIPTION OF OPERATIONS/REMARKS  TOTAL Casing = = 0.0 ft.  N/A  R.  K.  DESCRIPTION OF OPERATIONS/REMARKS  TOTAL Casing = = 0.0 ft.  N/A  R.  R.  K.  10:30  Conduct daily safety meeting. A discussion was held regarding anticipated activities of the same properties of	L Curry/DE Morris									
N/A  Time  DESCRIPTION OF OPERATIONS/REMARKS  TO 07:30  Or:30  Conduct daily safety meeting. A discussion was held regarding anticipated activition or:30  10:30  Contractor enters TX Tank Farm. Equipment is loaded on the flatbed and equipment buratek yard. All equipment is removed from the TX Tank Farm.  10:30  11:30  Haul materials/equipment to Duratek's yard.  11:30  12:00  Items were hauled to Duratek's yard where items were cleaned and organized.	A LICENSE #: 1217									
N/A  TIME  DESCRIPTION OF OPERATIONS/REMARKS  TO  07:00 07:30 Conduct daily safety meeting. A discussion was held regarding anticipated activiti 07:30 10:30 Contractor enters TX Tank Farm. Equipment is loaded on the flatbed and equipme Duratek yard. All equipment is removed from the TX Tank Farm.  10:30 11:30 Haul materials/equipment to Duratek's yard.  11:30 12:00 Lunch  Items were hauled to Duratek's yard where items were cleaned and organized.	THER: D Gostovich									
TIME FROM TO 07:00 07:30 Conduct daily safety meeting. A discussion was held regarding anticipated activition of the flatbed and equipment buratek yard. All equipment is removed from the TX Tank Farm.  10:30 11:30 Haul materials/equipment to Duratek's yard.  11:30 12:00 Items were hauled to Duratek's yard where items were cleaned and organized.	Johnson (Optr/PIC)									
TIME FROM TO 07:00 07:30 Conduct daily safety meeting. A discussion was held regarding anticipated activiti 07:30 10:30 Contractor enters TX Tank Farm. Equipment is loaded on the flatbed and equipme Duratek yard. All equipment is removed from the TX Tank Farm.  10:30 11:30 Haul materials/equipment to Duratek's yard.  11:30 12:00 Lunch  Items were hauled to Duratek's yard where items were cleaned and organized.	. Sharp									
FROM TO 07:00 07:30 Conduct daily safety meeting. A discussion was held regarding anticipated activiti 07:30 10:30 Contractor enters TX Tank Farm. Equipment is loaded on the flatbed and equipment buratek yard. All equipment is removed from the TX Tank Farm.  10:30 11:30 Haul materials/equipment to Duratek's yard.  11:30 12:00 Lunch  12:00 Items were hauled to Duratek's yard where items were cleaned and organized.	. Ancelet (HPT) . Hartelius									
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16:30 Area Secured.										
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REPORT BY: DE Gostovich REVIEWED BY: MG Gardner										
	TE: 10-9-02									

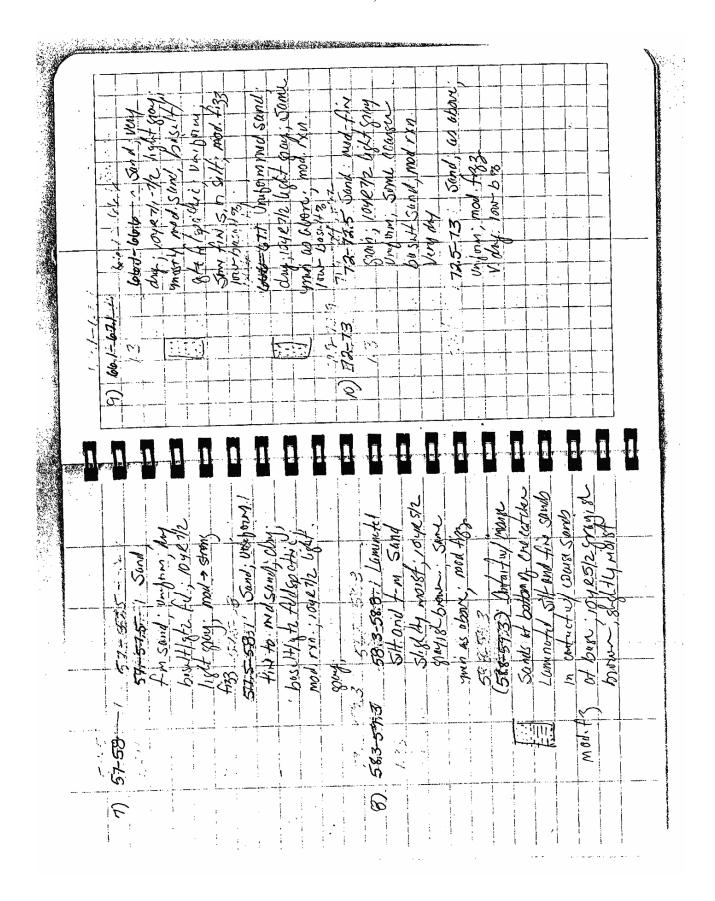
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## APPENDIX B GEOLOGIC SAMPLE LOGS

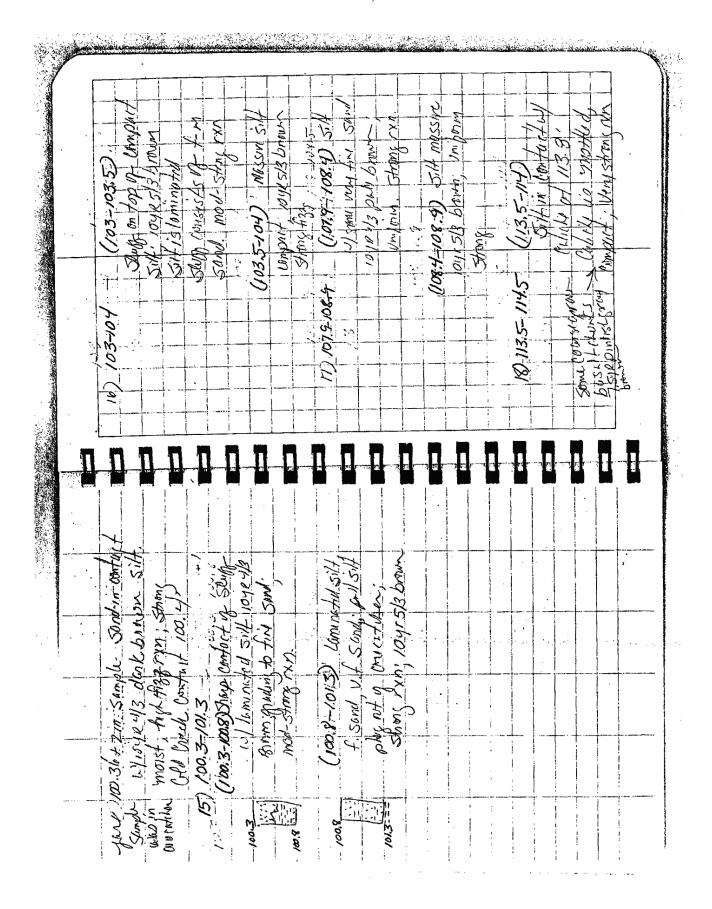
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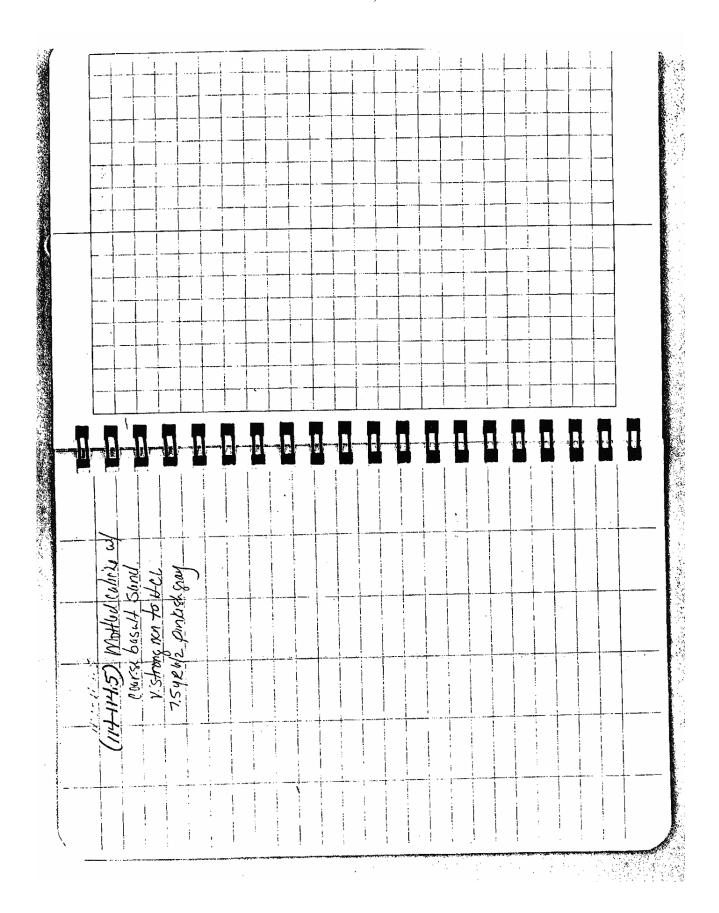
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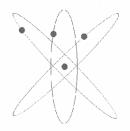
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# APPENDIX C GEOPHYSICAL LOGS

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# **Pacific Northwest Geophysics**

4200 West 19<sup>th</sup> Ave Kennewick, WA 99338 (509) 735-3963

"No Job Is Too Large or Too Small"

September 17, 2002

Mr. Kent Reynolds Duratek Federal Services, Inc. 345 Hills Street Richland, WA 99352

Dear Mr. Reynolds,

Re: SUBCONTRACT NO. A00536, Task Order 18 Mod 2
TX-105 Tank Farm Borehole (C3830) Survey Data Processing

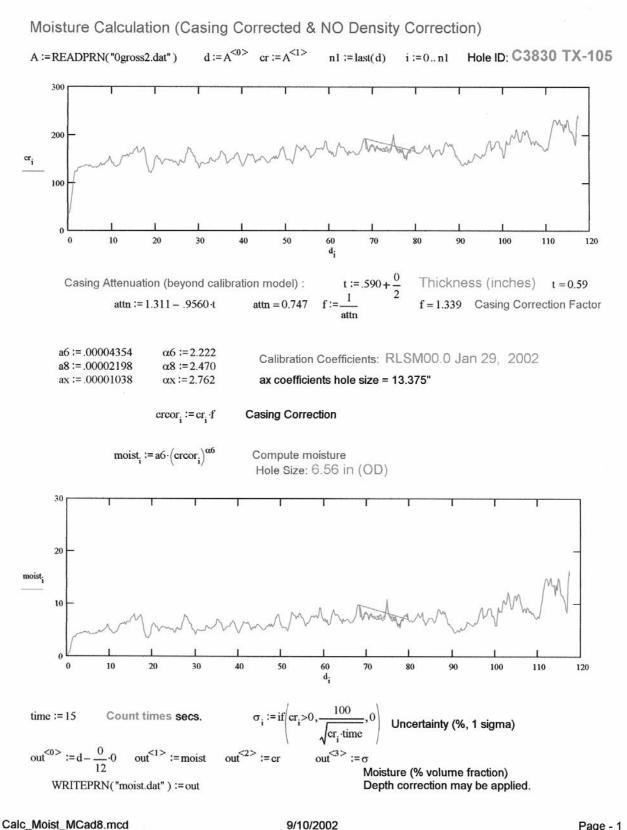
Enclosed are the deliverables for the Task Order 18 to subcontract A000536. The deliverables are HPGe spectral gamma and Neutron Moisture survey results for C3830-TX-105 and include:

- Moisture calculation from MathCad.
  - o MathCad results identify: borehole ID, calibration date, coefficients, and casing correction. No density correction was applied.
  - o Casing correction factor (multiplier) is 1.339.
  - o Calibrations coefficients are %vf=0.00004354CR<sup>2.222</sup> (6-inch calibration model)
  - o MathCad output file "Moist.dat" is ASCII. Tabular columns are: depth, moisture, raw count rate, and count rate uncertainty (1 sigma, percent).
- Radionuclide concentration from LgCalc.
  - All gamma photo peaks above MDL were identified to assure all radionuclides are included in the analysis results. Photo peak uncertainties less than 30% are above MDL levels. Radionuclide identification phase is in sub-directories "-RadID".
  - o Casing correction information is shown on the Borehole Survey Log Header.
  - o Calibration coefficients are:  $\epsilon(E)=1/(11.19E^{0.1068})$  as per ref. RLSG07000S01.0 calib. date Oct. 29, 2001; report date Jun. 3, 2002)
  - o Minimum Detection Levels are listed in the Log Analysis Summary Report.
- Final survey results in Microsoft Word ".doc" format. The results file contains:
  - o Borehole Survey Log Header (Moisture & Gamma surveys merged as one form)
  - Log survey results plot. One page containing both Moisture and Gamma results.
  - Log Analysis Summary Report (Moisture & Gamma merged)

Thank You,

Randall Price

Rondall Friend

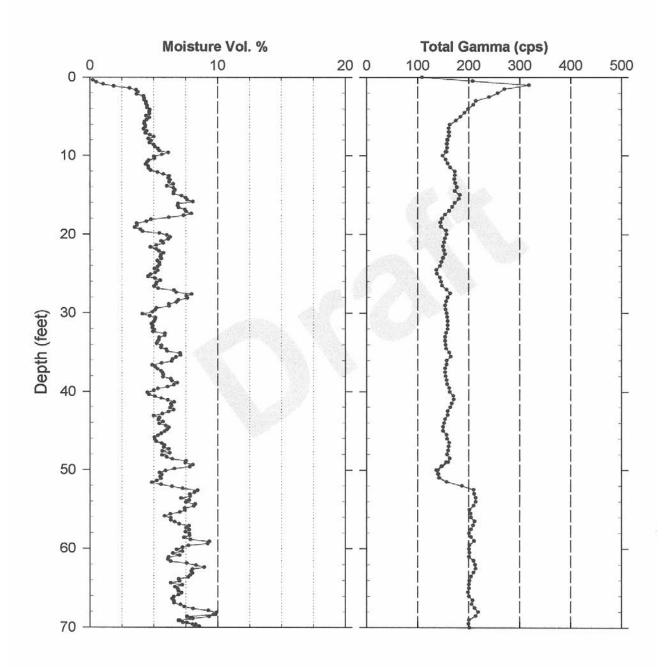


9/10/2002

Page - 1

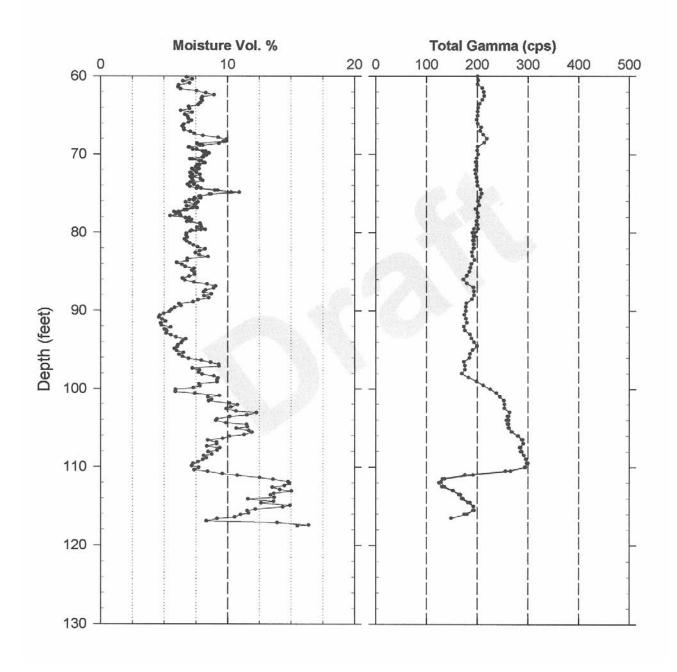
# RLS Moisture & Spectral Gamma Duratek Federal Services, NW Operations

Project: TX Drilling Log Date : September 2002
Borehole: C3830 Depth Datum: Ground Level



# RLS Moisture & Spectral Gamma Duratek Federal Services, NW Operations

Project: TX Drilling Borehole: C3830 Log Date : September 2002 Depth Datum: Ground Level



# **Borehole Survey Log Header**

Duratek Federal Services, Inc.

Project: 241-TX-105 Drilling

Borehole: C3830

Log Types:

HPGe Spectral-Gamma & Neutron-Moisture

#### **Borehole Information**

Well ID	C3830	Water Depth	None	_ft	Total Depth	115	ft
Elevation Reference	ce	Elevation	n/a	ft	-		
Depth Reference	Ground Level	Casing Stickup	4.75	ft			
Casing Diameter	5.81 in I.D.	Depth Interval	0to116.75	ft	Thickness	0.59	in
Casing Diameter	in I.D.	Depth Interval		ft	Thickness		in

#### Logging Information

Log Type	Neutron-Moistr	ire Gauge	HPGe Spectral	-Gamma
Logging Unit	RLS-1		RLS-1	
Logging Engineer	J. Meisner		J. Meisner	
Instrument ID	RLSM00.0		RLSG07000S0	01.0
Instrument Calibration Date	Jan. 29, 2002		Oct. 29, 2001	
Survey Date	Sept. 9, 2002		Sept. 9-12, 200	)2
Depth Interval / Prefix	0 to 80 ft	MC05	0 to 9.5 ft	A734
	68 to 117.5 ft	MC06	7 to 52 ft	A735
			49 to 82 ft	A736
			79 to 116.4 ft	A737
			103.5 to 116 ft	Repeat

### **Analysis Information**

Company	Pacific Northwest Geophysics
Analyst	Randall Price
Date	September 16, 2002

Notes: The repeatability (precision) of the Moisture and Gamma surveys is good. No Co-60 was detected in the survey. U-238 was detected from 49 to 69 feet at concentrations less than the MDL of 10 pCi/g. Moisture for 7.0-inch O.D. borehole was computed using the 6.56-inch O.D. calibration model coefficients.

# **Log Analysis Summary Report**

Duratek Federal Services, Inc.

Project: 241-TX-105 Drilling Well ID: C3830 Log Type: Neutron-Moisture & HPGe Spectral Gamma Log Dates: Sept. 12, 2002

#### **General Notes:**

The log response transitions at the survey top (0 ft) and bottom (115 feet and below) are the result of changes in borehole conditions (i.e. air to surface soils and at bottom from drill stem into drive shoe and into open hole).

The moisture survey shows that the formation moisture content gradually increases from about 5 vf% (volume fraction percent) near the surface to 15 vf% at the bottom of the hole. Decreased moisture content down to 5 vf% and lower concentrations of natural thorium and uranium were encountered between 89 and 93 feet, indicating a change in sediments. The moisture survey is appropriate for identifying changes in the relative moisture content.

The gross gamma increase below 52 feet reflects the transition from backfill material around the tanks into undisturbed sediments below the tanks.

**Environmental Corrections:** The casing thickness correction (as shown on the Borehole Survey Log Header) was applied to the detector responses before computing the apparent moisture content and radionuclide concentration. No formation density correction was applied since it is assumed to be similar to calibration model densities (approx. 1.76 g/cc). No casing correction was applied to the Total Gamma due to Compton down-scatter interference.

**Depth Reference:** Zero depth of log survey is at ground level. An error of +0.25 ft in the moisture survey depth resulted from difference in ground surface reference (Driller was using the top of the floor plate [3-inch thick] instead of the plate bottom).

System Performance Verification: The gamma survey pre- and post-log verification was performed using "Coleman #1" mantles. The FWHM (full width at half maximum) resolution for the 583 keV gamma ray photo peak (232Th) were all less than the maximum FWHM resolution of 3.15 keV for probe RLSG07000S01.0 except for the post survey spectra of data set A736 at FWHM=3.25 keV. The overlap sections between survey A736 and the neighboring surveys are excellent and concentrations of the natural radionuclides are within normal ranges. Spectra file A7371026 at 92 feet had broadening of the photo peaks that required manual processing. The logging operator indicated that amplifier gain changes had occurred. The calibration is not compromised and the HPGe surveys are valid.

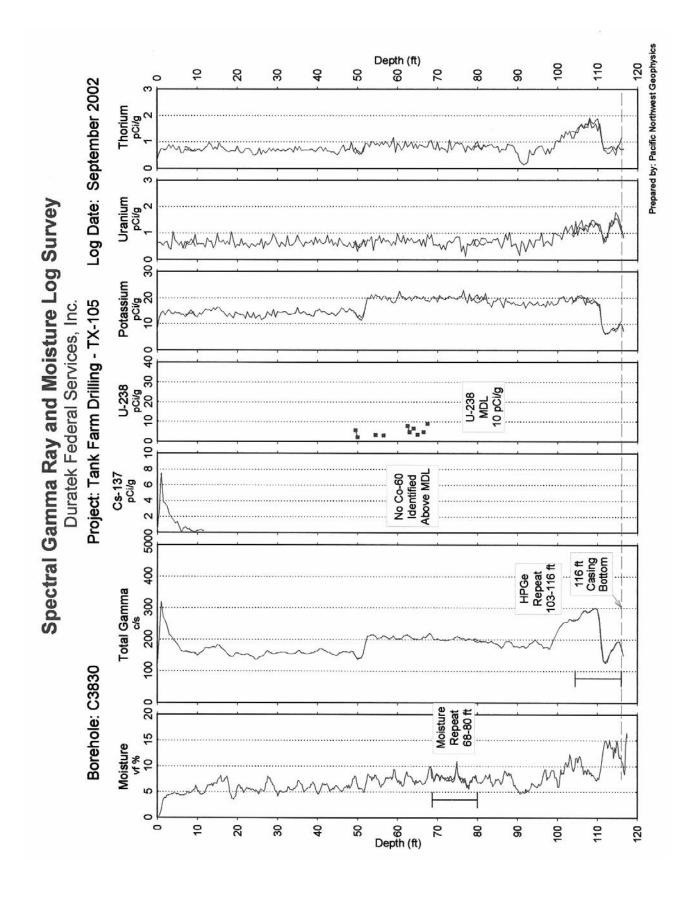
The moisture survey pre- and post-log verification measurements (722 and 700 c/s respectively) were within the range of previous system performance checks.

**Repeat Interval:** The repeat intervals have excellent agreement with the main log. (Moisture repeat is 68-80 ft.) (Gamma repeat is 103.5-116 ft.)

#### Radionuclides:

- Cs-137 is present at the surface (0 to 11 feet) at a concentration up to 7.5 pCi/g at 1 ft.
- Co-60 was not detected in the survey.
- U-238 was detected at concentrations less than the MDL level of 10 pCi/g.

	Co-60	Cs-137	U-238
max. Concentration	None	7.5 pCi/g @ 1 ft	< MDL
max. Depth at MDL	n/a	11 ft	n/a
MDL	0.1 pCi/g	0.1 pCi/g	10 pCi/g



	and the second	BOREH	OLE SUI	RVEY DATA SHE	<b>=</b> T				
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Tag bottom at 11		par on accid	ciia osca	Dackup readout and i	JOHOIII W	ag to i	0001.		
		BORI	HOLE LOG	GING INFORMATION					Accessed to
Logger:	JAMES E. MEISNER		-	Logging Unit Configuration	n: RLS1	611 681	-	- House	******
Depth Datum Referer	nce:	Ground	Surface	Instrument Calibration Co		Town of	RLSG0700	0500.0	•
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Source for Casing Pa	rameters:	A l		Measured w	ith Calip	ers			
Casing Diameter (in.)		Wall Thickr		Type of Metal:		Depth (		Stickup (ft):	
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Diameter (in.):		Wall Thickr	noce (in ):	Type of Metal:	Total	Depth (		Stickup (ft):	10.00
	lone		IA	Type of Metal.	<b>▼</b>	NA		NA NA	
File Name Prefix:		Field Disk/F	Part:	Return Error (in.):	High/l	Low at (	ft):	Field Verifier I	D:
-	A737	A	737	1.000	LOW		▼	COLEMAN 1	-
Pre Log Verification:	Charles A. A. A. A.	Gross c/s:		Background .c/s:	Th 58	3 keV p	hoto peak	FWHM:	
NESCO'S COMME	eran al-fabrican al-fabrican and fabrica	218	6.00	1499.00	7		n	<b>a</b>	
Post Log Verification:		Gross c/s:	Marian Carres	Background .c/s:	Th 58	3 keV p	hoto peak	FWHM:	
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Depth Range	Start (ft): 79.00	Stop (ft):	5.50	Incr (ft): 0.50		ANED.	AS PER F	ROCEDURES	
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Depth Range	Start (ft):	Stop (ft):	Part of the same	Incr (ft):	Signal	ture:	4	MEG THE COLUMN	
		and the second second second	e e applicación de la companya		_ \	am	(M	Diama	
Log Interval	Fix Speed (fpm):	Move-Stop-	Acquire(s {L	T/RT):	CANADA A	y' ''	1,100	Mr. A.	
	Cr. 4 (a)		3.55 Year	<u>,                                    </u>	Date				
Depth Range	Start (ft):	Stop (ft):		Incr (ft):		U	9/12	/02	

TX Farm Dr 09/11/0	rilling Well Name:	9	Well ID:	9	C3830
	2 Location:	TX Tank Fa	rm, South of	f Tank T	X-105
	ECOCION.		ini, Godai G	i i di iik	X-100
		Notes:			
5	i.0-4.75=.25 meas. Pt i	in hole w/ top of cablehe	ad		
Matter property and a second	BOREHOLE LOG	GING INFORMATION			
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ice:	Ground Surface	And the second s	uration:	RLSG0700	S00.0
ENGLISH CONTRACTOR	116.75   Source:	Driller Water Level (ft):	Dry	Source:	Driller
rameters:		Measured with	Calipers		
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ione			J	<b>A</b>	Stickup (ft):
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William Control			School Construction of the		SERVER RESERVENCE SERVERS
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Project:	TX Farm Dri		Well Name			Well ID:		C3830	
Date:	09/10/02	2	Location:	TX Ta	ank Fa	rm, South o	f Tank 1	TX-105	W277
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	5.	.0-4.75=.25	meas. Pt	in hole w/ top of ca	blehea	ad			
						***************************************			
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Sink Map	CONTRACTOR OF THE PROPERTY OF	BOK		GING INFORMATION	activities of the first	RLS1	<b>▼</b>		-
Logger:	JAMES E. MEISNER	il Crouns	Surface	Logging Unit Configu	Filtractivetee		RLSG070	2500.0	-
Depth Datum Referer	ice.			Instrument Calibration	MORDIC (AUDIONALITY)		TERRORESSON (TITLE)	Driller	
Total Well Depth (ft):		116./5	Source:	Driller Water Level	E-Contractor -	Dry	Source:	Driller	
Source for Casing Pa	de antique la company		, ,	Measure	u with	A SUBSECTION OF		Stickup (ft):	
Casing Diameter (in.)	D, I.D. = 5.81	Wall Thick	ness (in.):	Type of Metal:	-	Total Depth (1		4.75	
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File Name Prefix:	\735		735	0.000		LOW	<i>y.</i>  ▼	COLEMAN 1	
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				All Market State of the State o		Date	Medicum 1947		
					TODO STRUMENTON	4			

Project:	TX Farm D	Orilling Well Name		Well ID:	C3831
Date:	09/09/		01	Tank Farm,	Tx105
			Notes:		
				4	
4.5 to TOC this S	Should have been 4	.75 including the plate	·		
			should have been 4.88-4	.75=.13)	
		as top of floor plate ar	nd is 3" thick		
TD-117.20(inc. 3	g was corrected for	this 25' arror (2")			
Service Control of the Control of th	g was corrected for		GGING INFORMATION		
Logger:	JAMES E. MEISNER		Logging Unit Configuration:	RLS1	<b>\</b>
Depth Datum Refere	TOO OF THE PARTY O	Ground Surface	Instrument Calibration Confi	guration:	RLSM0.00 MOISTURE WA
Total Well Depth (ft)		116.75 Source:	Driller Water Level (ft) :	Dry	Source: Driller
Source for Casing F			Measured with	Calipers	
Casing Diameter (in		Wall Thickness (in.):	Type of Metal:	Total Depth (	THE PROPERTY OF THE PROPERTY O
O.D = 7	'.0, I.D. = 5.81	0.59	CARBON STEEL	116.	
Diameter (in.):	No.	Wall Thickness (in.):	Type of Metal:	Total Depth (	
	None				
Diameter (in.):	None	Wall Thickness (in.):	Type of Metal:	Total Depth (	
Diameter (in.):		Wall Thickness (in.):	Type of Metal:	Total Depth (	
Diameter (m.).	None	NA	, , , , , , , , , , , , , , , , , , ,	The property of the second of	
File Name Prefix:		Field Disk/Part;	Return Error (in.):	High/Low at (	(ft): Field Verifier ID:
	MC05	MC05	0.000	LOW	▼ COLEMAN 1 ▼
Pre Log Verification	ne veneralista	Gross c/s:	Background .c/s:	Th 583 keV p	photo peak FWHM:
		722.00	na		na
Post Log Verification		Gross c/s; 700.00	Background .c/s:	Th 583 keV p	photo peak FWHM:
20/21/20/20/20/20/20/20/20/20/20/20/20/20/20/		700.00			
Log Interval:	Fix Speed (fpm): 0.90	Move-Stop-Acquire(s {	.T/RT}): na	1,000	NO ODERATIONS MESSE
	Start (ft):	01- (8)		The state of the s	NG OPERATIONS WERE PRIMED AND EQUIPMENT
Depth Range	0.00	Stop (ft): 80.00	Incr (ft): 0.25		AS PER PROCEDURES, 17.0 PHYSICAL LOGGING.
	Fix Speed (fpm):	Move-Stop-Acquire(s {	_T/RT)):		FEDERAL SERVICES, INC.
Log Interval:		parentaria (Processor Constitution processor Landscape and Processor Landscape Landscape)			
Depth Range	Start (ft):	Stop (ff):	Incr (ft):		
Бори гландо	68.00	117.50	0.25	Prepared by	(print):
Log Interval:	Fix Speed (fpm):	Move-Stop-Acquire(s {I	.T/RT <b>)</b> ):	JAMES E.MEISN	NER 🔻
Depth Range	Start (ft):	Stop (ft):	incr (ft):	Signature:	- (M) n. c
Log Interval:	Fix Speed (fpm):	Move-Stop-Acquire(s {	I T/RT}):	Date	e zii Jihanan
	Start (ft):	Stop (ft):	Incr (ft):	Daid	9/9/02
Depth Range	114.00	108.00	0.50		

west Character and the control of	TVE	COUNCIL PROPERTY CONTRACTOR	Large Acquire to the con-	RVEY DATA SH	SECONO PARTIES			C3830	715
Project:	TX Farm D		Well Name:	TVT	nk Fa	Well ID:	f Tank 7		_
Date:	09/09/0	)2	Location:	IX Ia	INK Fa	rm, South o	TIANKI	X-105	- 7/-
	Alexander and a little section.			Notes:	Control of the contro			7.5 (G.C)	
									_
					Nacional Section 1				_
No. 141		5.0-4.75=.25	meas. Pt i	n hole w/ top of ca	blehea	ad			
									damento e
		BOR	EHOLE LOG	GING INFORMATION	l .		ALC:		
Logger:	JAMES E. MEISNER	- III	▼	Logging Unit Configur	ation:	RLS1	▼		
Depth Datum Refere	nce:	Ground	d Surface	Instrument Calibration	Config	uration:	RLSG070	0500.0	*
Total Well Depth (ft)		116.75	Source:	Driller Water Level (	ft):	Dry	Source:	Driller	
Source for Casing P	<b>建筑和政党自然</b> 的第三人称形式 (1915年)			Measure	d with	Calipers			
Casing Diameter (in	):	Wall Thick	ness (in.):	Type of Metal:		Total Depth (	ft):	Stickup (ft):	3-1116/11
	.0, I.D. = 5.81	0	.60	CARBON STEEL	~	116.7	75	4.75	
Diameter (in.):		Wall Thick	ness (in.):	Type of Metal:		Total Depth (	ft):	Stickup (ft):	
	None		NA		-	NA	k.	NA	
Diameter (in.):	only state of the second	Wall Thick	ness (in.):	Type of Metal:		Total Depth (	ft):	Stickup (ft):	2 - 22 P
	None		NA		-	NA	V	NA	
Diameter (in.):		Wall Thick	ness (in.):	Type of Metal:		Total Depth (	ft):	Stickup (ft):	
	None		NA	.,,	-	NA		NA	
Ell N D C		Field Diele	Dodu	Dotum Cook (in )		High/Low at (	e)-	Field Verifier ID:	Mark Ja
File Name Prefix:	A724	Field Disk	No. of the last of	Return Error (in.): 0.000	Manual contra	LOW	it).	COLEMAN 1	- -
	A734	J.O. 00074-1 11-10-	734	TO A THE RESERVE AND A STATE OF THE STATE OF	CONT.	A SERVICE CONTRACTOR		SASSEMUL BEING VERY VICTOR VICTOR	
Pre Log Verification:		Gross c/s:	25.00	Background .c/s: 1254.00	A. 10 - 10	Th 583 keV p	- Tul-Willelen - 100	ia	
		THE REAL PROPERTY.	THE STATE OF THE S		OF CHILD			A CONTRACTOR OF THE PARTY OF TH	-
Post Log Verification	Franki marakan da aktuar 1989	Gross c/s:		Background .c/s:		in 583 kev p	noto pear	K FWHM:	
		see papers in the			ter same		100000000000		and the same
Log Interval:	Fix Speed (fpm):	Move-Stop	-Acquire(s {L						
	na na	2 300		150rt		5-3-2-35 (2002) (300)	NAMES OF THE PERSON OF THE PER	RATIONS WERE ND EQUIPMENT	
Depth Range	Start (ft):	Stop (ft):		Incr (ft):		PERMIT	THE RESERVE TO SERVE	PROCEDURES,	
	0.00	75.00 (CD)	9.50	0.50	Serator Kilo	The state of the s	A CHECK TO SEE STORY CONTROL	AL LOGGING,	
Log Interval:	Fix Speed (fpm):	Move-Stop	o-Acquire(s {L	.T/RT});		DURATER	CEPER	AL SERVICES, II	NC.
					59/4/25 77 F	Property and the same			
Depth Range	Start (ft):	Stop (ft):		Incr (ft):			NAME OF TAXABLE PARTY.		
			and the second second			Prepared by	(print):		
Log Interval:	Fix Speed (fpm):	Move-Stor	o-Acquire(s {L	.T/RT}):	18 July 18 18 18 18 18 18 18 18 18 18 18 18 18	JAMES E.MEISN	NER		•
		Constant State Section 1			Parties of the				
Depth Range	Start (ft):	Stop (ft):		Incr (ft):		Signature:	2 40 7 41 2 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	A SAME AND A SAME AS	
Departunge					Table Commen	1 //	~ C(V	10-01	
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Log litterval.						Date:	16. Titler		
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Depth Range	Start (it).	Stop (ft):	4. 4	more try.	Company with the	4 .	9/0	1/UZ	

# APPENDIX D CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUESTS

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# 6268 CLEANING FACILITY EOUIPMENT CHECK IN FORM CUSTOMER PROJECT . ITEM QUANTITY Complete Split Spoons S. Harold TX-Borehole 15 CUSTOMER INFORMATION: The equipment that is being submitted for cleaning, to the best of my knowledge, meets the tollowing criteria for acceptance into the 6268 cleaning facility. Is new equipment that has never been utilized for field sampling. ✓ The equipment has been utilized for field sampling inside of a radiologically controlled area, but has \_\_\_ The equipment has been utilized for field sampling, but was not utilized a radiologically controlled area. Customer:\_\_\_\_\_Print Name:\_\_\_\_\_D:ste:\_\_\_\_\_ RECEIPT INFORMATION Receiver: K.J. - Joung Print Name: K.J. - Joung Date: 8/20/02

	ratel			VΗV	2	OF CTI	THAIN OF CHISTODY/SAMPLE ANALYSIS BEOLIEST	BEOURST CO.C#	102292
Foderal Services	Foderal Services	<b>4</b> 8		CILC				Page	1 Jo 1
Collector YOUNG, K.J.	JNG, K.J.	1				Contact/Requestor	questor SYDNOR, HAROLD	Tel. No. 372-9414 MSIN H0-22	FAX
SAF Number S02-083	S02-083					Sample Or	Sample Origin To FACM	Purchase Order/Charge Code	
Project Title TX Borehole (3830)	C Borehole (38	8				Logbook#	DFSNW-SALS-HSS	Ice Chest # SALS - 003	Temp.
Shipped To (Lab) AG&G	AG&G					Method of	Method of Shipment Gov Treest	Bill of Lading/Air Bill No.	
Protocol RCRA						Data Turnaround	around PER CONTRACT	Offsite Property No.	
Sample No.	Lab. ID	*	Date	Time	No/T	rpe Container	No/Type Container Sample Analysis		Perservative
S02083-01		*	6/16 kg 1030	50	9	(J) 125 P	IC Anions (EPA 300.0)		Cool to 4°C
S02083-01		≥	_	_	S	(1) 500 P	ICP Metals - 6010A (TAL)	e.	HN03
S02083-01		≽	_		S	(I) 1000 aG	Semi-VOA (8270)		Cool 4 deg. C
S02083-01	.7	≽			S	(1) 250 aGs	TOC (9060)		. H2SO4/Cool to 4°C
S02083-01		≽			3	(1) 1000 P	Total Alpha / Beta (Lab Specific), GEA		HN03
S02083-01		≥		_	S	d 0001 (1)	Tritium, (H3)		Cool to 4°C
S02083-01		*	د	~	ව	40 aGs	VOA		HCL

Hold Time	Matrix *  S = Soil DS	SO = Solid SL = Sludge	3 > X		Date/Time
NS	B/27/02 153	Date/Time	Date/Time	Date/Time	
SPECIAL INSTRUCTIONS	Received By Print W. Valling	Received By	Received By	Received By	ocess. Disposed By
MSDS Yes   No 18	Sign Date/Time	Date/Time	Date/Time	Date/Time	customer, per lab procedure, used in pro
POSSIBLE SAMPLE HAZARDS/REMARKS List all known wastes.	Relinquished By, Print K. J. Co. Sign	Relinquished By	Relinquished By	Relinquisted By	FINAL SAMPLE Disposal Method e.g. Return to customer, per lab procedure, used in process.  DISPOSITION

15   15   15   15   15   15   15   15		Daratek		S	HA	IN OF CU	JSTODY/SA	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	SIS REQUEST	C.O.C#	٤٠ - "
	Collector K.	1/oung	.0			Contact/	stor		Fct. No. 372-94		FAX
A C & C	SAF Number	502-08	M			Sample (	F	1	Purchase Order/Charg	e Code	
		X Bone 1	Alak	9	387			SAWS	Ice Chest #		
CCQA   Date   Time   Not/type Continuer   Sample Analysis   Actach   Obside Property No.   1   140   120   11   15   15   15   15   15   15   1	Shipped To (Lab)		۵			Method	=	としてこれ		No.	
Lab.10   * Date   Time   Noffye Continuer   Sample Ambysis   Actual   Depth   14 - 36 - 7   14 - 36 - 7   14 - 36   14   14   14   14   14   14   14   1	Protocol	RCRA				Data Tui		1	Offsite Property No.		
	Sample No.	Lab. ID	*	_	Time	No/Type Containe	r Sample Analysis				Perservative
C    C    C    C    C    C    C    C	502083-all		80		021		J. CO.	ntract	·46 ->	31	7°C
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(1)   (2)   (2)   (3)   (4)   (5)   (7)   (7)   (7)   (7)   (1)						()			æ	THE STATE OF THE S	
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NMPLE IIAZARDS/REMARKS   NSDS Yes   No   SPECIAL INSTRUCTIONS   IIoid Time						( ).		3			
Print   Sign   Date/Time   Received By   Print   Sign   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Sign   Date/Time   Date/Ti						0				.,	
Print    Print   Print   Sign   Date/Time   Received By   Print   Sign   Date/Time   Sign   Date/Time   Matrix*	POSSIBLE SAMPI List all known w	E HAZARDS/RE astes.	MARK	s	2	Yes	155 gr	SPECIAL INSTRUCTIONS	OII	ıd Timė	
Date/Time   Date/Time   Date/Time   Date/Time   Signature   Disposed By   Date/Time   Signature   Disposed By   Date/Time	1 3	B	1 5	1	0 02	ale/Time	45	Juny Lo Gor-	1888	Matrix = Soil	• Drum Solids
Date/Time   Received By   Date/Time   W = Water   L = Date/Time   W = Water   L = Date/Time   Date/Time   A = Air   X = Air	Relinquished By				Δ	ate/Time	Received By			<ul><li>Sodiment</li><li>Solid</li><li>Sludge</li></ul>	1 1 1
PLE Disposal Method e.g. Return to customer, per lab procedure, used in process.  Date/Time  Date/Time	Relinquished By				Δ	ale/Time	Received By			Water Oil	/ = Liquid ·
Disposal Meliod e.g. Return to customer, per lab procedure, used in process. Date/Time	Relinquished By				А	atc/Time	Received By		Date/Time		
	FINAL SAMPLE DISPOSITION	Disposal Method e.	g. Return	to customer,	per lab	procedure, used in proc	css.	Disposed By		Date/Tir	16
STANISO											DENMASSION

Contact/Requestor   Sample Origin   Sample Origin   T-7	purstor Sydnor Harolds  JF FALM  DFSNW-SAUS-HSS  hipment Golfrock  round Par Contract	Tel. No. 372-9414 MSIN HO-22	
502-083  TX Bare Hold (C387)  AG & G  RCAA  Lab. 10 * Date Time  Blula ON40  Blula ON40	DFSNW-SAUS-HSS hipment Gov Truck round Par Contract		FAX
AGA GACA HOLE (C387 AGA GACAA Lab. ID * Date Time Ballon OPHO 8/21/02 1750	DFSNW-SAUS-HSS hipment GOUTOOK round Par Contract	Purchase Order/Charge Code	
AGA GA CACAA Lab. ID * Date Time Blula On 40	3 3	lee Chest# Oron # 1 Temp.	
Lab. ID * Date Time  Balo Onyo  Balo 1250	9	Bill of Lading/Air Bill No.	
Lab. ID * Date Time	On somethy to an house in	Offsite Property No.	
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POSSIBLE SAMPLE HAZARDS/REMARKS MSDS Yes D. List all known wastes.	No C SPECIAL INSTRUCTIONS	Hold Time	
V	Received By Print Sign Sign County Losoft	Date/Time	1
Date/Time		Date/Time SE = Sediment SO = Solid SL = Studge	1 1 1
	Received By	Date/Time   W = Water   L   O = Oil   V   A = Air   X	= Liquid = Vegetation = Other
Relinquished By Date/Time Re	Received By	. Date/Time	
FINAL SAMPLE Disposal Melliod e.g. Return to customer, per lab procedure, used in process.	Disposed By	Date/Time	

	Fodoral Sorvicus	N C		AILA	IN OF	CUSIO	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	SIS REQUES	Page	1 -
Collector K.	K.J100mg	P			Con	Contact/Requestor	Sydnor HAROLY	Tel. No. 372 -9414 MSIN	414 MSIN HO-22	FAX
SAF Number	502-083	83			Sam	Sample Origin	Į	Purchase Order/Charge Code	1	
Project Title	TX Bone Hole	五	0	38.	30) Leg	Logbook#	DFSNW-SAWS-HSS	lee Chest # Don #	£#7	Temp.
Shipped To (Lab)	AGA	O			Met	Method of Shipment	" GOTOCK			
Protocol	PCR	8			Data	Data Turnaround		Offsite Property No.		
Sample No.	Lab. 1D	*	Date	Time	No/Type Con	No/Lype Container Sample Analysis	-	Actual Paroth		Perservative
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S01083-07			2411 20/22/8	211	s/s(1)		*	þ	54.36	7%7
So2063 - CB			Bledoel453	1453	(i) 8/5	2	`	f	58.37	2
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SSIBLE SAMPLE ILA List all known wastes.	POSSIBLE SAMPLE HAZARDS/REMARKS List all known wastes.	EMAE	tiks		MSDS Yes	Š.	SPECIAL INSTRUCTIONS		Hold Time	
									ž	
Relinquished By	Print	1	Sign /	22/	Date Time		Ginry book Duny destry	Date/Time 8/22/67 1600	= Soil	
Relinquished By	5	•	э	-				1	1 1 1	DL = Drum Liquids T = Tissue WI = Wipe
Relinquished By					Date/Fime	Received By	Á	. Date/Time	W = Water O = Oil A = Air	L = Liquid V = Vegetation X = Other
Relinquished By					Date/Time	Received By	Å6	-Date/Time		
FINAL SAMPLE DISPOSITION	Disposal Method e.g. Return to customer, per lab	e.g. Ret	um to custome	er, per lab	procedure, used in process.	process.	Disposed By		De	Date/Time

Fodori	Fodoral Services				CHAIN OF COSTOD PARITIES ANALISM MECCEST	ו מיז חלים ויים ו	Page	
Collector K	K.J. ~ 100mg			Contact/Requestor	equestor Sydnor HAROLA	Tel. No. 372-9414	WSIN HO-22	FAX
SAF Number	502-083			Sample Origin	H- +4~m		Code	
Project Title	X Bone Hole	K (C38	8301	Logbook #		S lee Chest#	北 Temp.	
Shipped To (Lab)	AGEG			Method of Shipment	Shipment Gootest		lo.	
Protocol	RCRA			Data Turnaround		Offsite Property No.		
Sample No.	Lab. ID *	Date Time	-	Container		Atal Water	1	Perservative
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OSSIBLE SAMPLE HA List all known wastes.	POSSIBLE SAMPLE HAZARDS/REMARKS List all known wastes.	IKS	MSDS	Yes D.	No P SPECIAL INSTRUCTIONS	-	Hold Time	
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Relinquished By			Date/Fir		Received By		SE = Sediment SO = Solid SL = Sludge	J =
Relinquished By			Date/Time	Rex	Received By	Date/Time O	= Water = Oil = Air	L = Liquid V = Vegetation X = Other
Relinquished By		ŀ	Date/Time	Re	Received By	Date/Fime		
FINAL SAMPLE	Disposal Method e.g. Return to customer, per lab procedure, used in process.	um to customer, pe	r lab procedure,	used in process.	s. Disposed By		Date/Time	90

Collector   K. 1.   Collector   Collector   K. 1.   Collector   Coll	Duratek	ratek		СНА	IN O	r CUS	STODY/S	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	LYSIS	EQUEST	C.O.C.	7 P220	_
		~/00mg				Contact/Re				275-94		1	
	20.772	502-083			,	sample Ori	1	}		urchase Order/Char	1		
Data Turnstand	Project Title T	x Bone He	) 10	638		ogbook#	OFS	SNW-SAUS-H		C Chest # Drey	世	remp.	
CCCACA   Date   Time   NoViyec Centainer   Sample Analysis   According to the Condition   According t	Shipped To (Lab)	AG& G				Method of S	Shipment 6	るしていいれ		ill of Lading/Air Bil	l No.		
Lab.   Date   Time   Not Type Container   Sample Analysis   Actional   Daceton   Daceton	Protocol	RCRA				Jata Turna				Iffsite Property No.			
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MATULE LIAZARIDS/REMARKS MSDS Yes D. No SPECIAL INSTRUCTIONS  Friat Sign Date/Time Received By Date/Time Received By Spin Matrix  Date/Time Date/Time Received By Spin Matrix  Date/Time Date/Time Date/Time Received By Spin Matrix  Date/Time Date/Date/Date/Date/Date/Date/Date/Date/					0								
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AMTLE HAZARDS/REMARKS  WE WASTER  Print  Print  Date/Time  Print  Date/Time  Print  Date/Time  Date/Time  Date/Time  Bate/Time  Bate/Time  Date/Time  Date					()								
Print Date/Time Received By Print Sign Print Sign Print Sign Print Bate/Time Sign Print Bate/Time But Sign Print Bate/Time But Sign Bate/Time Ba	POSSIBLE SAMPLE List all known was	HAZARDS/REMA	RKS					SPECIAL INSTRUCT	SNOI	=	iold Time		
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PLE Disposal Method e.g. Return to customer, per lab procedure, used in process.  Date/Time	Relinquished By				9	┯-	CEIVED BY	Internetion					Orum Solids Orum Liquids Fissue Wine
PLE Disposal Method e.g. Return to customer, per lab procedure, used in process.  Date/Time Date/Time Date/Time	Relinquished By				Jate/Time	2	ceived By		۵ :	te/Dime	1 1 1		Liquid Vegetation Other
Disposed By Date/Time	Relinquished By				)ate/Time	28	ceived By		Č .	te/Time			
	FINAL SAMPLE   1 DISPOSITION	isposal Method e.g. R	ctum to custo	mer, per lab	procedure, use	d in process.		Dispose	d By		ii ii		

FOOR	Fodoral Services	,	THE	うべ	CHAIN OF COSTOD Y/SAMPLE ANALYSIS KEQUEST	AINALISI	SHOURS	Page	0 -	) e
Collector	K.J/00mg			Contact/Requestor	equestor Sydnon	HAROLA	Tel. No. 372-9414	414 MSIN HO-22	22 FAX	-
SAF Number	502-083	2		Sample Origin	1		Purchase Order/Charge Code	1		
Project Title	TX BORE HOLK	J	(3830)	Logbook#		tws- HSS	lee Chest # Doon	2 (#	Temp.	
Shipped To (Lab)	AGIG			Method of Shipment	Shipment Gor Track	74	Bill of Lading/Air Bill No.	ŀ		
Protocol	RCRA			Data Turnaround	G	contract	Offsite Property No.			
Sample No.	Lab. ID	* Date	Time No/I'y	e Container			Actual De	to when a		Perservative
11-530505		6/27/02 0810	Ĵ	sls	Per contract			0		3
21-50000		1218 PELL 1912/18	3	5/5	7		٦- 350 -1	28.35		, Joh
			0							
			2							
			0							
			0	H	4				-	
			0		*): #1)				-	
			*)		74 ·					
			()							
			С				141			
			0			*				
			0							
POSSIBLE SAMPLE 11/ List all known wastes.	'OSSIBLE SAMPLE HAZARDS/REMARKS List all known wastes.	ARKS	MSDS	Yes D.	No CA SPECIAL	SPECIAL INSTRUCTIONS		Hold Time		,
Relinquished By P	Print	Sign 9/2	Date/Time   Date/Time	530	Received By Print M. Nalenta M Valence	Sign Date	Date/Time	- Soil	Matrix *	Drum Solids
Relinquished By			. Date/Time		Received By		Date/Time	SE = Sediment SO = Solid SL = Sludge	Z I	Drum Liquids Tissue Wipe
Relinquished By			Date/Time	8	Received By		Date/Time	1 1 1	7 > X	Liquid Vegetation Other
Relinquished By			Date/Time	R	Received By		DateTime			
FINAL SAMPLE DISPOSITION	FINAL SAMPLE   Disposal Method e.g. Return to customer, per lab DISPOSITION	letum to customer	, per lab procedure,	procedure, used in process.		Disposed By			Date/Time	

SAF Number SO2 - 083  Project Title TX Bare Holk Shipped To (Lab) A646  Protocol RCRA Sample No. Lab. III *	Sw00/, 15.4		O.	Contact/Requestor	questor Sydnor HAROLY	Tel. No. 372-9414	HO-22 FAX	
Title To (Lab	83		S	Sample Origin	H- HACE			
Fo (Lab)	Holk	(638.	30)	Logbook#	DFSHW-SAUS-HSS	Ice Chest # Down #14. F	F Temp.	
ole No.	v		2	Method of Shipment	Gar Truck			
	8			Data Turnaround		Offsite Property No.		
21-130%	* Date	Time	No/Type C	Container	No/Iype Container   Sample Analysis	Actual Dupty	Pe	Perservative
7 .00	8/zsk	8/28/20 185S		1	Par contract	12.28 4 18.08	5	200
Y1- 58020S	187/9	6 फिक्क 1440	5/5 (1)	2	2	12.53 - 11.98	7	202
			С					
			Э		¥			
			0					
			С		·			
			0					
			*					
			0					
			()		>			
			( )				<i>,</i> *	
			0			21		
POSSIBLE SAMPLE HAZARDS/REMARKS List all known wastes.	EMARKS	D201	MSDS	Yes D.	No G SPECIAL INSTRUCTIONS	Hold Time		
Relinquished By Print	Sign Sign	8/25/07	Tim	1530 L	Received By U. Valento. An. Valenco	, , , , , , , , , , , , , , , , , , ,	Matrix *	Drum Solie
Relinquished By			Time			S S S	T T WI	<ul><li>Drum Liquids</li><li>Tissue</li><li>Wipe</li></ul>
Relinquished By			Date/Time	Re	Received By	Date/Time W = Water O = Oil A = Air	7 > X	Liquid Vegetation Other
Relinquished Dy			Date/Time	S.	Received By	Date/Time		
FINAL SAMPLE Disposal Method e.g. Return to customer, per lab procedure, used in process. DISPOSITION	e.g. Return to cu	stomer, per lab	procedure, use	ed in process.	Disposed By		Date/Time	

Federal Services	al Service	1 %				TO TOO	TOTO STATE OF THE OTHER PROPERTY OTHER PROPERTY OF THE OTHER PROPE	ממס אמצי מים	a	Jo I ofe	-
Collector K.	K.J/00mg	v	-		Cont	ContactRequestor	Sydnor HAROLY	Tcl. No. 372-9414 MSIN	1-	Z FAX	
SAF Number	502-083	83			Sami	Sample Origin		Purchase Order/Charge Code			
Project Title	TX Bone Hole	FOI	3	13830)		Logbook#	DFSNW-SAUS-HSS	Ice Chest # Oz	Temp.	ııb.	
Shipped To (Lab)	AGA	Q			Meth	Method of Shipment	Gatrick		Bill No. 7/7		
Protocol	RCRA	8			Data	Data Turnaround	Far contract	Offsite Property No.	-		
Sample No.	Lab. ID	*	Date	Time	No/Type Cont	No/Type Container Sample Analysis		Actual T	Dagter	P	Perservative
502063-15		- 4	13/02	Sis	s/s (1)	G	Condinat	10000	100.30	,	705
502083-16		v	91362 1300	36	(1) s/s	11	п	26.32 - 101.72	21.12	2	مام
	-				0						
					( )			3			
					( )		7 (7)				
					( )						
					0						
					*)						
					( )	34					
					( )		•				
					0						
					( )						
POSSIBLE SAMPLE HAZARDS/REMARKS List all known wastes.	JE HAZARDS/R astes.	EMARI	S	~	MSDS Yes	Š Ž	SPECIAL INSTRUCTIONS		Hold Time		
Relinquished By	Print /	1	Sign	Δ .	Date/Time	Received By	Print Sign	Date/Fime	Ma	Matrix *	
K.3. Jan	Santo	í	5	_	3/02 1400	Ginny	LPGON Thruy Lledor	9/3/02 1400	11	DS =	Drum Solids
Relinquished By	, ,	2		Д	ate/Time	Received By		Date/Time	SE = Sediment SO = Solid SL = Sludge	11 11 11	Orum Liquid Fissue Vipe
Relinquished By				П	Date/Time	Received By		Date/Fime	W = Water 0 = 0:1	7 > X	Liquid Vegetation Other
Relinquished By			E		Date/Time	Received By	4	Date/Time			

TEN FOOD	odoral Sorvices	1 %	ر	CTT/		) )	CHAIN OF COSTOD PARKEDE ANALISIS KEQUEST	TO TOTAL	STO DAY	Page	-	of Jo
Collector K.	K.J/00mg	S			Ö	Contact/Requestor	squestor Sydnor Harold	3h-A	Tel. No. 372 -94 14 MSIN	1-	22 FAX	
SAF Number	502-083	33			S	Sample Origin	1- HACM		Purchase Order/Charge Code		!	
Project Title	TX Bone Holk	H	)	(381	30)	Logbook#		HSS	Ice Chest # Down	- 4	Temp.	
Shipped To (Lab)	AGE	O			Z	Method of Shipment	Shipment Golfork		Bill of Lading/Air Bill No.	Bill No.		
Protocol	RCRA	7			Q	Data Turnaround		u u	Offsite Property No.	νо.		
Sample No.	Lab. ID	*	Date	Time	No/Type C	ontainer	No/Type Container   Sample Analysis	a	Actual Deoth	De oth		Perservative
502083-17		S	दीमीज	0130	s/s (1)	u	Per contract		102.49	104.44		7%7
81-530108		S	निपिकि ।	1311	\$ (1)					61.601		رو
				14	0							
	·				()		-2		,			
					( )		K					,
	1				()							
					()							
					*			2				
					()							
					0		シ					
					, ()							
					()							
OSSIBLE SAMPLE IIA List all known wastes.	POSSIBLE SAMPLE HAZARDS/REMARKS List all known wastes.	SMAR	S	ž	MSDS Y	Yes 🗆	No GO SPECIAL INSTRUCTIONS	TIONS		Hold Time		a:
Relinquished By	Print /		Sign	Ď	Date/Time	Rec	Received By Print S	Sign	Date/Time		Matrix *	
K.3 yours,	Barto	6	4/4/02	20)	0171		grow Lotor		9/4/02 1910	= Soil	DS	= Drum Solids
Relinquished By				Ö	Date/Time				Date/Time	SE = Sediment SO = Solid SL = Sludge	T W	<ul><li>Drum Liquids</li><li>Tissue</li><li>Wipe</li></ul>
Relinquished By				ä	Date/Time	Rec	Received By		Date/Time	W = Water O = Oil A = Air	× < ⊏	<ul><li>Liquid</li><li>Vegetation</li><li>Other</li></ul>
Relinquished By				ď	Date/Time	Rec	Received By	×	Date/Time			
FINAL SAMPLE DISPOSITION	Disposal Method e.g. Return to customer, per lab	.g. Retu	rn to customer	r, per lab p	procedure, used in process.	d in process.	Disposed By	sed By			Date/Time	
Company of the Compan												

FOURTH	Foderal Servicus	1 20				( ) )				Page	-	] jo
Collector K.J/	~ ~ (ouns	0				Contact/Requestor	questor Sychola	A HAROLA	Tel. No. 372-9414 MSIN	1	HO.22 FAX	
SAF Number	502-083	83				Sample Origin		ł	Purchase Order/Charge Code	1		
Project Title	TX Bone Hole	五	14	((38	301	Logbook#		OF SNW- SAUS- HSS	Ice Chest # Ocum		Temp.	
Shipped To (Lab)	AGE	0	-			Method of Shipment	Shipment Go Truck	とった		Bill No.		
Protocol	PCRA	7				Data Turnaround	G	con bract	Offsite Property No.	9.		
Sample No.	Lab. ID	*	Date	Time	_	Container	•		Actual Denath	Denoth Denoth		Perservative
502063-19		S		9/5/m 1000	(3)	sls	Fer contract	+	- 55.511	115,00		707
					С		No. of the last of					100
					С					3.		
					С							
					С		,					
					С							- tu
					С		-					
		_		_	*							
					0							
-					()		,					
					( )	25		ST				
					С							
POSSIBLE SAMPLE HAZARDS/REMARKS List all known wastęs.	HAZARDS/R	EMA	RKS		MSDS	Yes 🗆	No No	SPECIAL INSTRUCTIONS This Sample, \$02.053-19 For the TX project.	02063 - 19 project. "	Lingl Samole"	SAM 31,	guildues
Relinquished By Print	7		Sign	3	Date/Time	17.0	Received By Print	Sign	Date/Time		Matrix *	
Relinquished By				7		3 2	Comby Lolony Lor		Date/Time	S = Soil SE = Sediment SO = Solid SL = Sludge	N 1 DE	= Drum Solids = Drum Liquids = Tissue = Wipe
Relinquished By					Date/Fime	Re	Received By		Datc/lime .	111		= Liquid = Vegetation = Other
Relinquished By				100	Date/Time	Re	Received By		Date/Time			
FINAL SAMPLE D	Disposal Method e.g. Return to customer, per lab procedure, used in process.	c.g. Re	turn to cust	omer, per lat	procedure, u.	sed in process.		Disposed By			Date/Jime	

# APPENDIX E FIELD DOCUMENTATION

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PRELI	MINARY I	DATA			
Date: Location Boreho	O & 2 on: _TX T le Number:	CO O Z.  Sank Farm	Operator: Personnel: Rig Number:	BSE Pag K. OLSON 106 Hai	ge l of ll mmer: ICE 40S
Starter Drive (	Casing Size/ Casing Size/ Tip Size/Ty	CIFIC DATA e:7 inch O.I /Type:4.5 inch C ype:7.5 X 17.7 WeldedN/A	Constant  D. Starter C  D.D. Total De	:: _3.35 ft/3.1 top of pla lasing Depth:C pth:4.75 inch I.D d4.5 Pinpile	te/plate .25 ft
1,775,775	PTH	BLOWS/FT	AVE. STROKE	DRIVING TIME	TIP DEPTH
0	ı	3		08:20	
١	2 3 4 5	2			
3	3	2		N A	~/A
3	4	2			
4	5	3			
5	6.19	3		08:42	6,19
6.19	7.19	8		09:40	NA
8.19	9.19	12		NA	10/12
9.19	10.19	10			
10.19	11.19	9		09:41	11,19
11 19	12.19	12		10108	
	13.19	10	N/A		MA
13.19	14.19	8		~ A	1
14.19	14.96	ω		10:09	14.96
					1
14,96	15.46	1	502083-02	10:57	N/A
15.46	15.96	1	N/A	N/A	
	Prepared by	y: D.E. SKogl	Reviewe	d by: Mbland	10-8-02



PRELIMINARY I	DATA			
Date: <u>08 2</u> Location: _TX T Borehole Number:	O OZ	Operator: Personnel: Rig Number: _	K. OLSON	e 2 of 11 nmer: ICE 40S
Starter Casing Size Drive Casing Size/ Tip Size/Ty Joint Type:	CIFIC DATA  ::7 inch O.I 'Type:4.5 inch C ype:7.5 X 17.'  WeldedN/A	D Starter Control D.D Total Depter Conical:	: _3.35 ft/3.1 top of plat asing Depth: 14, pth: 27, 4.75 inch I.D 1 4.5 Pinpile	e/plate .25 ft
DEPTH	BLOWS/FT	AVE. STROKE	DRIVING TIME	TIP DEPTH
15.96 16.31	1		10:58	14.96
				12
14,96 15,96	, 4		12:50- 12:51	
15.96 16.96	10		13:13	1/0
16.96 17.96	10			70/7.
17.96 18.96	10		N A	
18.96 19.96	12			
19.96 20.94	13		13:14	20,94
20.94 21.94	14		13:35	N/A
21,94 22.94	14			N/A
22.94 23.94	14		NA	
23,94 24,94	14	M/A		1
24.94 26.02	15		13:36	26.02 N/A
				N/A
26.02 27.02	20		13:52	ĺ
27.02 27.91	11		13:53	27.91
27,91 28.41	2	502083-03	N/A	N/A
28.41 28.91	2	N/A		
Prepared by	y: D.E. SKO	glie Reviewed	1 by: Mobara	10-8-02



PRELIMINARY I	DATA			
Date: <u>08 Z0</u> Location: _TX T Borehole Number:	ank Farm	Operator: Personnel: Rig Number:	BSE Pag  K. OLSON  106 Hai	ge 3 of //
BOREHOLE SPE	CIFIC DATA	Constant	: _3.35 ft/3.1 top of pla	te/plate 25 ft
Drive Casing Size/ Tip Size/Ty	e:7 inch O.I 'Type:4.5 inch O.I ype:7.5 X 17.7	C44 C	asing Depth: 27 pth: 4.75 inch I.D. 4.5 Pinpile	91 1
Joint Type:	WeldedN/A_	Inreaded	4.5 Pinplie	
DEPTH	BLOWS/FT	AVE. STROKE	DRIVING TIME	TIP DEPTH
28,91 29,25	1		14:29	
27.91 28.91	8		075(12	N/A
28.91 29.91			07:42 NA	
29.91 30.95	10		07143	30,95
21,7 30,32	10		07745	30,77
30.95 31.95	10		08104	
31,95 32.95	10		1	N/A
32,95 33,95	13	~/^	N/A	
33,95 34,95	15	1777		
34.95 36.1	16		08:06	36.1
36.1 37.1	13		08:26	
37.1 38.1	15			NA
38,1 39,1	14		N/A	
39.1 40.1	14			.10.93
40.1 40.93	10		08:27	40.93
40.93 41.43	1	502083-04	09117	N/A
41,43 41,93	2	M/A	0 , , , ,	
			d by: Mbal	10-8-02



PRELIMINARY DATA								
Location: _T	21-22 02 X Tank Farm per: _C3830	Operator: BSE Page 4 of 11 Personnel: K. OISON Rig Number: 106 Hammer: ICE 46		ge 4 of 11 mmer: ICE 40S				
BOREHOLE SPECIFIC DATA  Constant: _3.35 ft/3.1 top of plate/plate .25 ft								
Starter Casing Size:         7 inch O.D.         Starter Casing Depth:         40.43           Drive Casing Size/Type:         4.5 inch O.D.         Total Depth:         50,05           Tip Size/Type:         7.5 X 17.75 inch         Conical:         4.75 inch I.D.           Joint Type:         Welded         N/A         Threaded         4.5 Pinpile								
DEPTH	BLOWS/FT	AVE. STROKE	DRIVING TIME	TIP DEPTH				
41,93 42.4	1		09:18					
40.93 41.93			10:42	N/A				
41.93 42.9	3 9		1	1				
42,93 43.9.	8	NA	NA					
43.93 44.9	3 9							
44.93 46.0	5 12		10:44	46.05				
			21.20					
46.05 46.5	5 1	502083-05	12:29					
46.55 47.0		N/A	12:30					
41. 4/1.			12.30	N/A				
47,5 48.	) 1	502083-06	07:43	- /-				
480 48.5	2		NA					
48.5 49.9	)		07:44					
46 05 47.0	5 7	N/A	08:50					
47.05 48.0			NA					
48.05 49.0			~ /~	50.05				
49.05 50.05 20 50.05								
Prepared by: D. F. SKoglie Reviewed by: Mban 10-08-02								



PRELIMINARY DATA							
Date: 8	Cank Farm	BSE Page 5 of 10 P					
BOREHOLE SPECIFIC DATA  Constant: _3.35 ft/3.1 top of plate/plate .25 ft							
Starter Casing Size: 7 inch O.D. Starter Casing Depth: 50.05  Drive Casing Size/Type: 4.5 inch O.D. Total Depth: 56.99  Tip Size/Type: 7.5 X 17.75 inch Conical: 4.75 inch I.D.  Joint Type: Welded N/A Threaded 4.5 Pinpile							
DEPTH	BLOWS/FT	AVE. STROKE	DRIVING TIME	TIP DEPTH			
50.05 50.87	15		08:52	50.87			
-097 -197	.=			N/A			
50.87 51.87	15	N/A	09:08	52.98			
51,87 52,98	16		09: 09	5 2.70			
52,98 53,48	3	502083-07	/1:/1				
53,48 53,98	3	1	NA				
53.98 54.36	2		11:12	./0			
				W/A			
52.98 53,98	11	N/A	13124				
53,98 54,98	28	707	NA				
54,98 55.98	34		- /*				
55,98 56.99	3 \		13:28	56.99			
56,99 57,49	3	502083-08	14:25 N/A				
57.49 57.99	4	1/0					
57.99 58,37	2	NA	14:26	N/A			
20 20 - 2 20							
58,29 58,79	2	502083-09 N/A	08153 NA				
58,79 59,29		······					
Prepared by: D.E. SKoglie Reviewed by: ploband 10-8-02							



PRELIMINARY I	DATA										
Date: <u>08 2</u> Location: _TX T Borehole Number:	ank Farm	Operator: Personnel: Rig Number:	BSE Pag 10. OLSON 106 Har	nmer: ICE 40S							
BOREHOLE SPECIFIC DATA  Constant: _3.35 ft/3.1 top of plate/plate .25 ft											
Constant: _3.35 ft/3.1 top of plate/plate .25 ft Starter Casing Size:7 inch O.D Drive Casing Size/Type:4.5 inch O.D Tip Size/Type:7.5 X 17.75 inch Joint Type: WeldedN/A  Total Depth:4.75 inch I.D Threaded4.5 Pinpile											
DEPTH	BLOWS/FT	AVE. STROKE	DRIVING TIME	TIP DEPTH							
59.29 59.7	2		08:53								
56 <sup>99</sup> 57.99	13		10:28								
50. 99 58 99	.5			./2							
57,99 58,99 58,99 59,99	12		N/A	N/A							
59,99 61.08	12		10:30	61.08							
		NA									
61.08 62.08	21		10:48	1							
62.08 63.08	30			N/A							
63.08 64.08	39		~/A								
64.08 65.08	38		1	1 0(1							
65,08 66.08	38		10:52	66.04							
66.06 66.56	2	502083-10	12:50								
66.56 67.06	2	1	12:50 N/A								
67.06 67,46	2,		12:51	NA							
		N/A									
66.6 67.00	8	,	13:50								
67.06 68.06	27		N/A	1							
68,06 69,06	22	I		69,06							
Prepared by: D.E. SKOGLie Reviewed by: Mybander 10-8-02											



PRELIMINARY I	DATA										
Date: <u>C8</u> 2 C Location: _TX T Borehole Number:	ank Farm	Operator: Personnel: Rig Number:	K. OLSON	ge 7 of //							
BOREHOLE SPE	CIFIC DATA	_									
Constant: _3.35 ft/3.1 top of plate/plate .25 ft Starter Casing Size:7 inch O.D Drive Casing Size/Type:4.5 inch O.D Tip Size/Type:7.5 X 17.75 inch Joint Type: WeldedN/A Threaded4.5 Pinpile											
DEPTH	BLOWS/FT	AVE. STROKE	DRIVING TIME	TIP DEPTH							
69.06 70.06	23 25		N/A	NA							
70,06 71.06		N/A	121.00	- 1 95							
71.06 71.95	43		13:59	71.95							
-, 05 77 45	7	5 × 2 × 5 2 × 11	A7127								
71.95 72.45 72.45 72.95	3	502083-11	07:37 N/A								
72.95 73.3	5		07:38								
12.73 13.7	1		01130	//							
71.95 72.95	8		08:46	N/A							
72.95 73.95	31	N/A	1								
73.95 74.95	35	1,1,1	N/A								
71195 7595	36		· / ·								
74.95 75.95 75.95 76.98	38		08:52	76.98							
777 74.	20		00.00	76.							
76,98 77.48	3	502083-12	11:00								
77.48 77.98	ŭ		NA	/0							
77.98 78,35	3		11:01	₩/A							
		N/A									
76.98 77.98	12		13:41								
76.98 77.98 77.98 78,98	12		13:41 N/N	78.98							
Prepared by: D. E. 5 Koglie Reviewed by: Molan 10-8-02											



PRELIMINARY I	DATA										
Date:         08 27 - 28 - 29 07         Operator:         BSE         Page 8 of //           Location:         TX Tank Farm         Personnel:         K. OLSON           Borehole Number:         C3830         Rig Number:         106         Hammer:         ICE 40S											
BOREHOLE SPE		Constant	: 3.35 ft/3.1 top of pla	te/plate .25 ft							
Starter Casing Size Drive Casing Size	e:7 inch O. /Type:4.5 inch ( ype:7.5 X 17.	D Starter Co	: _3.35 ft/3.1 top of pla asing Depth:	06							
Tip Size/T Joint Type	ype:7.5 X 17. : WeldedN/A	75 inch Conical: Threaded	4.75 inch I.D. 4.5 Pinpile								
DEPTH	BLOWS/FT	AVE. STROKE	DRIVING TIME	TIP DEPTH							
78.98 79.98	36	1/4	/								
79.98 80.91	38	1 <sup>1</sup> /A	13:46	80.91							
80.91 81.41	4	502083-13	08120								
81.41 81.91	4	1	/								
81.91 82.21	3		08:22	N/A							
				N/A							
80.91 81.91	noT										
81.91 82.91	RECORDEB	N/A									
82.91 83.91	.,										
83,91 84,91	w										
84.91 86.11	ν.			86.11							
86,11 86.61	4	502002 111	MPS								
86.61 87.11	3	502083-14									
87,11 87,41	3										
		N/A		N/A							
86.11 87.06	26	N/A									
87.06 88.06	22										
88.06 89.06	21			89.06							
Prepared b	y: D.E. SKO	glie Reviewed	d by: plane	10-8-02							



PRELIMINARY I	DATA										
Date: <u>08 29</u> Location: _TX 7 Borehole Number		Personnel:	K. OLSON	ge 9 of 11							
BOREHOLE SPE	CIFIC DATA		·								
Constant: _3.35 ft/3.1 top of plate/plate .25 ft Starter Casing Size:7 inch O.D Starter Casing Depth:89.06  Drive Casing Size/Type:4.5 inch O.D Total Depth:99.97  Tip Size/Type:7.5 X 17.75 inch											
DEPTH	BLOWS/FT	AVE. STROKE	DRIVING TIME	TIP DEPTH							
89.16 90.16											
90,06 91.06	19			·							
91.06 92.84	20										
92.04 93.04	24										
93.04 94.04	23			N/A							
94,04 95.04	25	NA	NA								
95.04 96.04	76	1									
96.04 97.07	21										
97.51 98.11	24										
98,11 98,97	5			98.97							
98,97 99,47	3	502083-15	08:44								
99.47 99.97											
99.97 100,36	2	NA	N/A 08:45								
				NIA							
100,32 100,82	2	502083-16	12113	, , , ,							
100.82 101.32	2		N/A								
101.32 101.72	1	N/A	12:14								
		///									
98,97 99,97	9			99,97							
Prepared by: D. E. SKoglie Reviewed by: Mlband W-8-62											



PRELIMINARY I	DATA										
Date: 69 03- Location: TX T Borehole Number:	Cank Farm	Operator:, Personnel: Rig Number:	BSE Pa K. OLSON Ha	ge /O of // mmer: ICE 40S							
BOREHOLE SPE	CIFIC DATA										
Starter Casing Size: 7 inch O.D. Starter Casing Depth: 99.97  Drive Casing Size/Type: 4.5 inch O.D. Total Depth: //09.89  Tip Size/Type: 7.5 X 17.75 inch Joint Type: Welded N/A Threaded 4.5 Pinpile											
DEPTH	BLOWS/FT	AVE. STROKE	DRIVING TIME	TIP DEPTH							
99,97 100.97	18			1/4							
100.97 101.97	17		NA	N/A							
101.97 102.99	20	NIR		102.99							
00 1/0			l								
102.99 103.49	2	502083-17	07:58								
103.49 103.99	3		/								
103,99 104,44	2		07:59	V							
00 00		·		N/A							
102,99 103,99	7	·									
103,99 104.99	15	NIA									
104.99 105.99	17	101.	N/A								
105.99 106.99	20			l							
106.99 107.89	22			107.89							
		I									
107.89 108.39	2	S02083-18	12:28	-							
108,39 108.89	2		M/A								
108,89 109,19	۲		12:29	N/A							
		N/A									
107.89 108.89	12		N/A								
108.89 109.89	30			109.89							
Prepared by		glie Reviewed	iby: Mean								



PRELIMINARY I	NATA .											
Date: 69 64 Location: TX T	Date:         69         64         2         Operator:         BSE         Page // of //         Page // of //           Location:         TX Tank Farm         Personnel:         K. OLSON         Hammer:         ICE 40S           Borehole Number:         C3830         Rig Number:         /OG         Hammer:         ICE 40S											
BOREHOLE SPECIFIC DATA  Constant: _3.35 ft/3.1 top of plate/plate .25 ft Starter Casing Size:7 inch O.D Drive Casing Size/Type:4.5 inch O.D Tip Size/Type:7.5 X 17.75 inch Joint Type: WeldedN/A  Constant:3.35 ft/3.1 top of plate/plate .25 ft Starter Casing Depth:/09.89  Total Depth:/16.75  Conical:4.75 inch I.D Threaded4.5 Pinpile												
DEPTH	BLOWS/FT	AVE. STROKE	DRIVING TIME	TIP DEPTH								
109.89-110.89	3 4											
110.89 - 111.89	24											
110.89 - 111.89	25	N/R	N/A	NA								
113.0 - 113.6	36			113.6								
				1								
113,55- 114,05	5	502083-19	51:10									
114.05 - 114.55	7	1	NA									
114,55 - 115,0	6		69:13									
			01.17	N/A								
113.6 - 114.0	13		12:30	1								
114.0 - 115.0	60		/2.70									
115,0 - 116.0	78		N/A									
1169-116.42	40	~/^	1/									
116.42-116.75	54		12147	116.75								
(10. 110.	J (		12191	116.73								
			1/2	1.14								
			N/A	N/A								
				1								
Prepared by	y: D.E. SKO	glie Reviewed	by: Mllan	10-8-02								

### APPENDIX F FIELD LOGBOOK ENTRIES

Project TX - Bonehole C3830 Continued from Page 34	Notebook No. OFSHW-SAWS-	H 22
	(1, - (1, - 1) 6   1	
08/20/02 - Stat of Samplins icb T		<del>  .   .      </del>
0700 - On Sta, Attended prej	ab starting TX-105 130	rihole
	- A. K.J /oung sample.	
0825 - Standed driving casine	to first sample point	
1045 - Added sampler to dr	ue string	
1057 - arove sample # 5	07083-07	
1120 - collected sample , At		ntaminati
	oil at top of sample, ('s	
cut of Air hole") 1007	Ev S	
1240 - Startuce driving casing		
1415 - Added Samples to de	100 34013	
14130 - crove sampler # 507	083 -03	
1446 - collected sample. Fr	om 27.91 - 29.25 ft, No c	ontaminati
no moisture, no soil	rusent at top of sample	r. 100%
	samples to 3750 Las	
08/21/02		
0640 - On Site, Attended pro	int K.) Vous Sample	
0742 - Started druine casine	1000	41-4284
OTTE Started divine Casing	to next sample depter.	11111
0855 - Adda sample to dry		
0918 - char sampler # SOZOS		<del>                                     </del>
0940 - collected sample from		
no moisture, 10070 for	11, I got colored Soil in top	, of
Sampler		
1041 - Drave casing to maxt	sample dapter 46-47 Ft	
1110 - sauded sample to chi		
1220 - Drue sample to to	set depty of 46-47 Ft # S	20-2905
1250 - collected sample from	46.20 - 47.50 Ft, No conta	L. 20 L.
100 100 1 00 100 E.	1, light colored soil in top	
		or Sample
1310 - Add at sample to de		
	samples to 3720 bilding -	
5/21/02		1.
0650 On Site Attended pre		
0740 Drove sampler target	dopter 418-419 ft # 50208	3-06
0818 collected sample fro	om . 47.50 to 49.0 ft, Noc	ontam nati
	light colored fine soil in top	1 1 1 1 1
0911 - Started aniving asing	The state of the s	
	Continued	on Page
/	Pood and Undowstood Pro	
, , ,	Read and Understood By	
J. Jang per-/g 8/22/02	· · · · · · · · · · · · · · · · · · ·	
Signed	Signed	Date

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1040-	Add	w	5	An	P	c	to	d	٠,٠	c	54	10	5_	S	OZ	08	3	-0	7							
1112-	000	مو	54	hm	اخ	e	+2	عد	et	رم	ص	tu	_:	53	-5	4	Ft									
1310	- 627				•			Ŭ			,															
1142 -	100	ac t	ac/	=	an	m	1	=	52.	98	+	0	54	.30	- 4	+	1	0	co	14	۵.		at			
	No																									
1310												-	~	. t	a	.0	4	5	5	-5	8	Ft				
1405 -																										T
1422 -	Dra	Q 4	2		10										$\tilde{}$			_			T	1				T
1453-							ماه		5	4.9	9	_	55		2		7			10			١.		1	H
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1520-																_	_				-		-		-	
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0740																										20.17
1031																		~~	+	BL	- 1 <i>c</i>		~~?	~	٦.	
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Project <u></u> ¬★	Borahole	L 105 C3	830	Notebook No. DPSHW-SAWS - 1+53	3
Continued Holli I	age				
0731.	Drac .	sample .	302053-	1 Taged Depth 72-73 Ft	
0810	- collect	act Same	1e. 71.9	5-73.30 Pt No contamination	
	no mo	nstra,	10090 FU	1.	7
0816				to reach next sample point	
	OF 77	- 70 Ft			
0920	- Drue				
			04 40 540	Il red # Sozces-18 Taget	
1.0		OF 77-		The second of the second	1
1100 -					+
			(#5020		+
1133				.98 - 78.35 Ft, No contamination	4
+			10090 rac		-
(250-	Stated	chiung o	ASING FEM	nort sample point E1-E2 Ft	
1440-	Added	Sample 4	e chive	rod # 502083-18 13	
150-	left to	Ship SAV	uples to	3720 LAS.	
3/20/02					
0645	- on Site	attano	and praje	6 K. D. Young Sampler.	
			ng fen H		
				18 Target creptu EI-82 FL.	
0855	- Collacto	ed Samole	80.91 -	62 - 1/2 El Actual clapter No conta	$\Box$
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0910				next sample arepto of 56.67 ft	$\vdash$
1323	2-4-4-4		- Total	100 MON # 50 200 7 - 14	
1407				100 100 100 100 100 100 100 100 100 100	
1,103	- Crave	Sample	12501	cleptu of 86-87 Ft.	
1-1-40				1 to 87.411 Ft No contamination	$\vdash$
				very fine sand out of Air Hot	
1520 -	laft to	ship sa	mples to	3720 LAS.	
8/29/02					
710 -	On Site	Attend	اصل محوردا	o/ Safety meeting K. J. James	
				(Sampler)	
850 -	saded	رمعرم	and chi	ing to next sample clopes	
	UF 99.	100 Pt.		9	
0922-	Added	CASING	and drie	rias .	
1200-		1 day			
	collect.	4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 7.32	( lost HOT) No Samplus	
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003-	Auded	- samples			
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Signe	0	3	Date	Signed Date	

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## APPENDIX G EQUIPMENT CLEANING FORM

# 6268 CLEANING FACILITY EQUIPMENT CHECK OUT FORM

QUANTITY	ITEM	CUSTOMER	PROJECT	TPCN or WORK ORDER
2١	Complete Split Spoons	S. Harold	TX Bonehole	
			1	
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	, u.e. e	3		240 *
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	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX			
·				
*All equipmen RCRA/CERCLA	t has been cleaned per ES-SSPM-001 SP 2-5 A Sampling Equipment.	, "Laboratory Clea	ning of	
	nature: Su Comprint Name: K.			
Customer Sign	ature:Print Name:	Date:		

#### APPENDIX H

#### WASHINGTON STATE DEPARTMENT OF ECOLOGY DOCUMENTATION



### Notice of Intent to Construct a GEOTECHNICAL SOIL BORING

S 00632

This form must be received by the Department of Ecology72 hours prior to construction of soil boring. Complete this form and mail to Department of Ecology, Water Resources Program, Well Drilling Unit, P.O. Box 47600, Olympia, WA 98504-7600. Instructions for filling out this form are printed on the back.

	Olympia, WA 98504	1-7600. Instruction	s for filling out this form ar	e printed on the	back.	
1.	Property Owner U.5	DEPARTME	OT OF ENERG	<u> </u>	Phone No. <u>(509) 373</u>	9630
	Address (include city, stat	te, zip) 825	JADWIN AVE.	RICHLA	Nd. WA. 9935	2
2.	Agent (if different from #1	DURATEK				8029
	Address (include city, stat	te, zip) <u>345</u>	Hills ST., Ric	chland,	WA. 99352	
3.	Project Name TX	VADOSE Z	ONE PROJECT	- BORIN	6 # C3830	
4.	Well Location: NE 1	/4 of the <u>SW</u>	-	Fownship 12	O[	(circle one)
	Address (if known) //	AN FORD .	SITE, 200 W	lest area	TX TANK WWM	FARM
5.	Location of Well(s)		,		•	
	□ Adams County	01-ERO	☐ Grays Harbor County	14-SWR	☐ Pierce County	27-SWR
	☐ Asotin County	02-ERO	☐ Island County	15-NWR	☐ San Juan County	28-NWR
	Benton County	03-CRO	☐ Jefferson County	16-SWR	□ Skagit County	29-NWR
	☐ Chelan County	04-CRO	☐ King County	17-NWR	Skamania County	30-SWR
	☐ Clallam County	05-SWR	□ Kitsap County	18-NWR	☐ Snohomish County	31-NWR
	☐ Clark County	06-SWR	☐ Kittitas County	19-CRO	☐ Spokane County	32-ERO
	☐ Columbia County	07-ERO	☐ Klickitat County	20-CRO	☐ Stevens County	33-ERO
	☐ Cowlitz County	08-SWR	☐ Lewis County	21-SWR	☐ Thurston County	34-SWR
	☐ Douglas County	09-CRO	☐ Lincoln County	22-ERO	☐ Wahkiakum County	35-SWR
	☐ Ferry County	10-ERO	☐ Mason County	23-SWR	☐ Walla Walla County	36-ERO
	☐ Franklin County	11-ERO	☐ Okanogan County	24-CRO	☐ Whatcom County	37-NWR
	☐ Garfield County	12-ERO	☐ Pacific County	25-SWR	☐ Whitman County	38-ERO
	☐ Grant County	13-ERO	☐ Pend Oreille County	26-ERO	☐ Yakima County	39-CRO
6. 8.	Total number of borings Well Drilling Co Name_				construction date July ne No (509) 946	, 01, 2002 9388
9.		nr. Kelly	,			
		5			er's License No /2/	
10	. Contractor's L & I Regist					***************************************
no	Please fill out the portion ne person submitting this no otification. Send the entire co. Box 47600, Olympia, V	otification. This profession form to Departm	oortion will be validated	and returned to	o them as proof of	of
	This notification n	umber <u>must</u> be	provided to your well	driller:	S	00022
		Submit by (reta	urn address)		5	00632
			•			
					Agency Va	lidation
	Name M.C. M	ARTINI C	CARNUER		7.35.109	
	Mailing Address		CT		Date	
	2	nd State	WA Zip 99352	.		
	ORY ///CK LA	orate_	007, _CIP	•		
						ECY 040-55 (10/97)



345 Hills Street Richland, Washington 99352 (509) 376-7055 - Phone (509) 372-1435 - Fax

October 17, 2002

MGG-02-2423

Mr. Joe A. Caggiano State of Washington Department of Ecology 1315 West 4<sup>th</sup> Avenue Kennewick, Washington 99336

Dear Mr. Caggiano:

#### WATER WELL REPORT

Attached is a Water Well Report for well C3830. Well C3830 is located in the 200 West Area (TX Tank Farm) at coordinates N136166.88, E 566795.41, and elevation 206.085.

Please reference Start Card numbers S00632 (Notice of Intent to Construct a Geotechnical Boring).

Should you have any questions, please contact me at (509) 372-8029.

Very truly yours,

M. G. Gardner, Manager Sampling and Well Services

Moch

jmt

Attachment

CHG - A. J. Knepp

H. A. Sydnor

FH - J. E. Auten

DFSNW - K. R. Reynolds

D. E. Skoglie

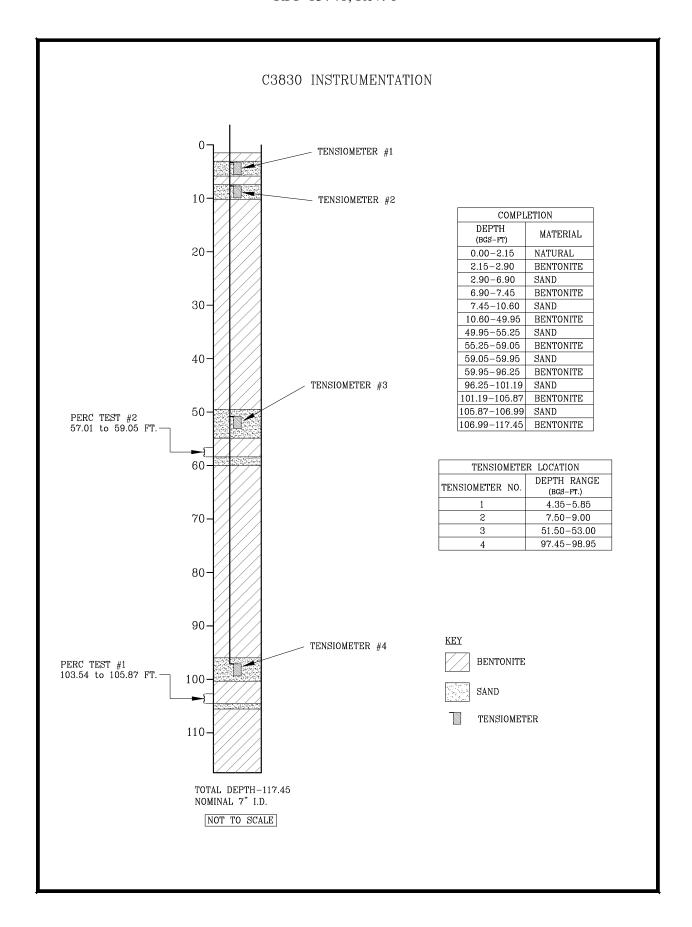
S. H. Worley

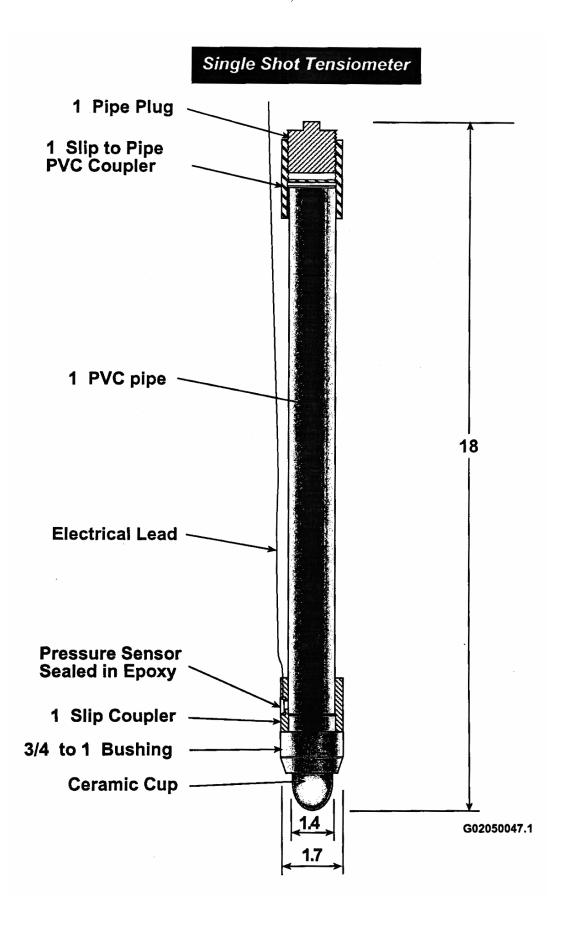
MGG File/LB

CHG/RC3011

WATER WELL REPORT	CURRENT Notice of Intent No. S00632			
Original & 1st copy - Ecology, 2nd copy - owner, 3rd copy - driller	Unique Ecology Well ID Tag No. N/A			
Construction/Decommission ("x" in circle)	Water Right Permit No. N/A			
♦ Construction     Decommission ORIGINAL CONSTRUCTION Notice	Proposition Control of the Control of the Control of Co			
of Intent NumberS00632	Property Owner Name_U.S. Department of Energy			
PROPOSED USE: Domestic Industrial Municipal Sensors DeWater Irrigation Test Well Other Moisture	Well Street Address 825 Jadwin Avenue			
TYPE OF WORK: Owner's number of well (if more than one) C3830	City Richland County: Benton			
New Well Reconditioned Method: Dug Bored Driven	Location NE 1/4 1/4 SW 1/4 Sec 1 Twn 12 R 25 EWM in			
☐ Deepened ☐ Cable ☐ Rotary ☐ Jetted	N136166.88		WWM	
DIMENSIONS: Diameter of well 7.5 inches, drilled 116.75 ft.	Lat/Long: (s,t,r still E566795.41 EL: REQUIRED)	206.085		
Depth of completed well 98.95 ft.		Tax Parcel No.		
CONSTRUCTION DETAILS  Casing Welded Diam. fromft. toft		ON PROCEDI	IDE	
Casing         Welded         " Diam. fromft. toft         ft. toft           Installed:         □ Liner installed " Diam. fromft. toft         ft. toft	Formation: Describe by color, character, size of material and structure, and the			
☑ Threaded 7.0 " Diam. from 0 ft. to 116.75	kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. Indicate all water encountered.			
Perforations: Yes No	(USE ADDITIONAL SHEETS IF NECESSARY		ou.	
Type of perforator used	MATERIAL	FROM	то	
SIZE of perfsin. byin. and no. of perfsfromft. toft	Construction Details:			
Screens: Yes No K-Pac Location				
Manufacturer's NameModel No	Driving Casing:			
DiamSlot Sizefromft. toft.		-	446.75	
Diam. Slot Size from ft. to ft.	Drive 7-in. O.D. casing/	0	116.75	
Gravel/Filter packed: ☐ Yes ☒ No ☐ Size of gravel/sand	shoe to total depth.			
Materials placed fromft. toft.	S1/1		100.0	
Surface Seal: Yes X No To what depth?ft  Materials used in seal	Sand/gravel Caliche	109.0	109.0	
Did any strata contain unusable water? Yes No	carrene	103.0	110.75	
Type of water?Depth of strata	Back fill/back pull	116.75	101.19	
Method of sealing strata off	Casing Bentonite	96.25	55.25	
PUMP: Manufacturer's Name	casing benconite	49.95	10.6	
Туре: Н.Р		7.45	6.9	
WATER LEVELS: Land-surface elevation above mean sea levelft.  Static levelft. below top of well Date		2.9	2.15	
Artesian pressure tos. per square inch Date				
Artesian water is controlled by	Install Tensiometer	101.19	96.25	
(cap,valve, etc.)	- 11 7		10.05	
WELL TESTS: Drawdown is amount water level is lowered below static level.  Was a pump test made? ☐ Yes ☑ No If yes, by whom?	Install Tensiometer	55.25	49.95	
Yield: gal/min. with ft. drawdown after hrs.		100000	7.45 XX45	
Yield: gal/min. with ft. drawdown after hrs. Yield: gal/min. with ft. drawdown after hrs.	Install Tensiometer	10.6	XX4X	
Recovery data (time taken as zero when pump turned off)(water level measured from	Install Tensiometer	6.9	2.9	
well top to water level) Time Water Level Time Water Level Time Water Level	Install Tensioneter	0.5	2.3	
Time Water Level Time Water Level Time Water Level	Natural fill added	2.15	0	
	Matarar Fift added	4.10		
Date of test				
Bailer testgal/min. withft. drawdown afterhrs.  Airtestgal/min. with stem set atft. forhrs.				
Artesian flowg.p.m. Date	Start Date 08/20/2002 Completed	Date 09/19	/2002	
Temperature of waterWas a chemical analysis made? ☐ Yes ☐ No				
WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept res Washington well construction standards. Materials used and the information	consibility for construction of this well, and its	compliance v and belief	vith all	
□ Driller □ Engineer □ Trainee Name (Prior) □ D. E. Skoglie	Drilling Company <u>Duratek Fed</u>		ices. In	
11 ~ 11 5 1 1. 1	— Address 345 Hills Street		,	
		20250		
Driller or Trainee License No. 1580	City, State, Zip Richland, WA !			
If trainee, licensed driller's	Registration No.DURATFS990K5	Date 10/1	6/02	
Signature and License no	Ecology is an Equal Opportunity Employer.	7 - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	a Prima de la compania del compania del compania de la compania del compania de la compania de la compania del compania de la compania de la compania de la compania de la compania del compania del compania del compania del compania del la compania del	
			,	

### APPENDIX I VADOSE ZONE TENSIOMETER PLACEMENT





Reynolds, Kent

"Gee, Glendon W" <glendon.gee@pnl.gov> From:

[GTSD\_HQ.GTSD\_HQ\_GWIA."glendon.gee@pnl.gov"] on behalf of

GTSD\_HQ.GTSD\_HQ\_GWIA."glendon.gee@pnl.gov" Tuesday, September 10, 2002 4:07 PM

Sent:

To:

GTSD HQ.GTSD HQ\_GWIA."Harold\_A\_Sydnor@rl.gov"; Reynolds, Kent; Skoglie,

Dave; Gardner, Marty

Subject: RE: Sensor Placement



Kent: These plans are okay for us. We have extra long cable for contingency purposes so all should be fine as far as cable length and the sensors are not constrained by the proposed placement depths in any way. gwg

Original Message-

From: Reynolds, Kent D

Sent:

Tuesday, September 10, 2002 3:48 PM

To:

Sydnor, Harold A; Gardner, Martin G (Marty); Skoglie, David E; Gee,

Glendon W

Cc:

Knepp, Anthony J

Subject:

Sensor Placement

Mr. Sydnor and I have reviewed the draft Moisture Logs generated in the field from C 3830 (TX-105). Several zones appear to be favorable for sensor placement and percolation testing.

For the sensor planned for approximately 100 ft BGS. Percolation test recommended for 104 to 106 ft BGS. Sample number S02083-17 was taken from 102.99 to 104.44 ft BGS and can provide laboratory derived data on lithology, moisture content, chemistry, etc. Moisture log data indicate the zone be at approximately 11% moisture content by volume. Lithology is assumed to be silt and fine to medium sand interbeds of the Cold Creek facies.

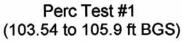
Sensor placement recommended to be 97.5 to 99 ft BGS Sample number S02083-15 was taken from 98.97 to 100.36 ft BGS and can provide laboratory derived data on lithology, moisture content, chemistry, etc. Moisture log data indicate the zone be at approximately 9% moisture content by volume. Lithology is assumed to be interbedded fine to medium sands and silts of the lower Hanford immediately above the Cold Creek.

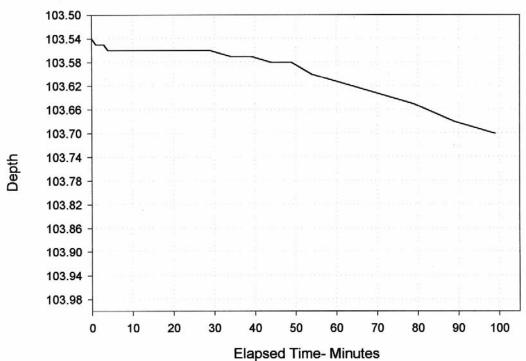
Sensor planned at 50 ft. BGS

Percolation test recommended for 57 to 59 ft BGS. Sample numbers S02083-08 and 09 were taken from 56.99 to 59.7 ft BGS and can provide laboratory derived data on lithology, moisture content, chemistry, etc. Moisture log data indicate the zone be at approximately 8% moisture content by volume. Lithology is assumed to be medium to fine sands with some silt interbeds typical of Hanford sand facies.

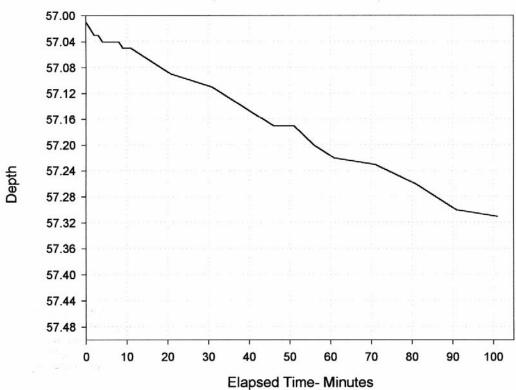
Sensor placement recommended for 52-53.5 ft BGS. Sample number S02083-07 was taken from 52.98 to 54.36 ft BGS and can provide laboratory derived data on lithology, moisture content. chemistry, etc. Moisture log data indicate the zone be at approximately 8% moisture content by volume. Lithology is assumed to be medium to fine sands with some silt interbeds typical of Hanford sand facies.

Note: The samples from this probe hole are presently archived and are not planned to be opened until FY 03 at the PNNL 300 Area Laboratory. Therefore data pertaining to actual lithology and physical properties will not be available until some time into FY03.





#### Perc Test #2 (57.01 to 59.05 ft. BGS)



### APPENDIX J NOISE MONITORING



Date: May 16, 2002 Time: 07:00 am Location: TX Farm Inspectors: Jason Sweesy/Duratek Safety

#### **TX-TY Borehole Drilling**

Report # 02-005

Background: Borehole drilling and sampling for characterization and migration of plumes found underground.

#### Citation Findings 1. Completed real time Generator noise survey of 81 dB generator located to Hearing Protection Boundry Line the north of the support area. 83 dB Support Trailers Approx. 3 Feet Exhaust Fan 86 dB 95 dB North

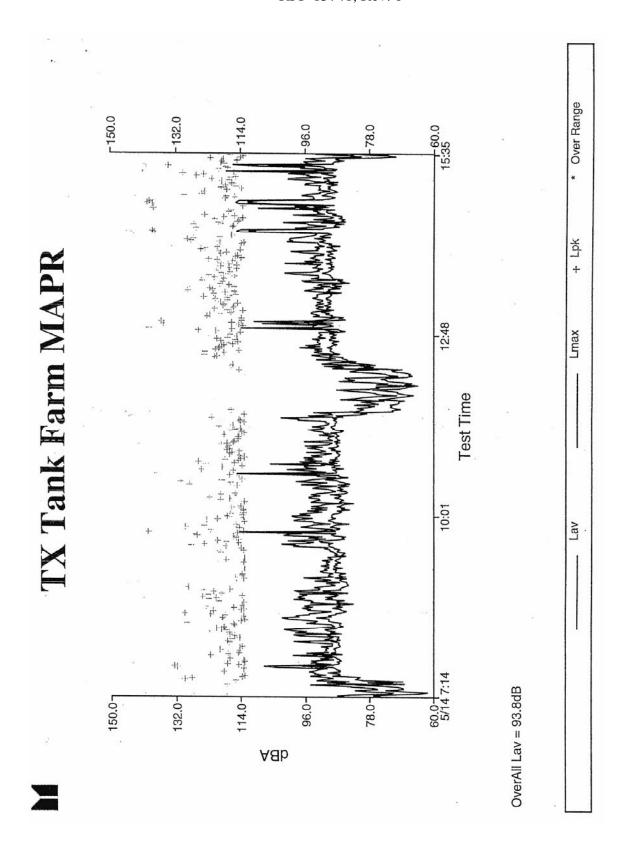
#### COMMENTS:

General area monitoring was conducted with a Metrosonic dB-3100 Sound Analyzer (5711) calibrated with a Metrosonics acoustical calibrator (102 dB before and after; calibrated 12/20/01). Peak value was from the generator fan directly at the discharge. Informed client person In charge (PIC) of the results and analysis with recommendation to keep loitering around the postings to a minimum. According to the PIC the area outside of the boundaries is not occupied other than occasional foot traffic. The generator only runs when drilling operations are being conducted.

#### Analysis:

Hearing boundary postings are adequate for the site conditions. Minimal foot traffic with no personnel at the boundary greater than 4 hours. Should there be a need to be adjacent to the boundary for greater than 4 hours, a reevaluation of the noise levels shall be conducted.

Page 1 of 1 Report #02-005



#### RPP-13741, Rev. 0

#### Summary Report

Test Location....TX Tank Farm

Employee Name....Kelly Olson

Employee Number...0029732

Department......Blue Star Employee

Comment......performed normal borehole drilling activities. Good range of work

duties.

Metrosonics db-3100 SN 5711 V1.7

Report Printed 05/15/02 at 07:25

Exchange Rate...3 dB

Filter...A Wt.

Dose Criterion....85 dB

Response.....Slow

Calibrator Type.....Accustical SN..6114

Calibrator and Calibration Date..12/20/01

Pre-Test Calibration Time: 05/14/02 at 06:30

Pre-Test Calibration Range: 40.3dB to 140.3dB

Post Calibration 05/15/02 at 06:25

Test Began....05/14/02 at 07:14

Test Length....0 Days 08:22

Test Ended...05/14/02 At 15:36

Lav.....93.8dB

Lav (80)...93.8dB

Lav (90)...93.1dB

SEL.....138.5dB

TWA.....94.0dB

TWA (80)..94.0dB

TWA (90)..93.3dB

Lmax...117.8dB on 05/14/02 at 15:21

Lpk.....141.0dBon 05/14/02 at 15:22

Time Over 115.0dB 0 Days 00:00:04

8 HR % Dose (80dB Cutoff)......804.09%

8 HR % Dose (90dB Cutoff)......687.61%